SCHOOL OF PHARMACY AND HEALTH PROFESSIONS ALL COURSES

School of Pharmacy and Health Professions All Courses

IEP 001. Creighton Rehabilitation International Summer Program (CRISP). 0 credits.

Creighton Rehabilitation International Summer Program (CRISP) beginning in July annually is for international students studying occupational therapy, physical therapy or a related rehabilitation degree. Participants are undergrad students at their home institutions. This program provides similar experiences to the May CRISP but in a condensed version with less activities. Participants in the program will be taught based on and expected to meet the following objectives: Participant will participate in lectures and labs with additional opportunities to participate in supplemental lectures online; Participant will be expected to participate in the learning environment by actively participating in lectures and labs, completing course readings, reviewing and practicing rehabilitation techniques with peers; Participant will gain improved American physical rehabilitation intervention practices across the lifespan based on theory, evidence based practice and application of skills in lab; Participant will participate in coursework such as kinesiology, orthopedics, neuro rehabilitation, pediatrics, musculoskeletal, cardiovascular, mental health and geriatrics; Participant will have the opportunity to tour in healthcare clinics affiliated with Creighton University and CHI Health; Participant will exhibit professional behaviors within the classroom, labs and clinical setting; Participant will demonstrate an understanding of institutional policies and procedures relating to patient confidentiality and safety; Participant will develop essential knowledge and skills to contribute to his/her rehabilitation education and apply his/her advanced knowledge to coursework in their home country; Participant will develop language skills through learning environment and activities and through social interactions with Creighton faculty, staff and peers; Participant will engage with interprofessional health care professionals and students to increase knowledge of scope of practice; and Participant will experience cultural immersion activities within the learning environment and outside during evenings and weekends. Activities include local cultural events, visiting local landmarks and attending local performing arts performances while socializing with Creighton students, faculty and staff. Creighton Rehabilitation International Summer Program (CRISP) beginning in July annually is for international students studying occupational therapy, physical therapy or a related rehabilitation degree. Participants are undergrad students at their home institutions. This program provides similar experiences to the May CRISP but in a condensed version with less activities. Participants in the program will be taught based on and expected to meet the following objectives: Participant will participate in lectures and labs with additional opportunities to participate in supplemental lectures online; Participant will be expected to participate in the learning environment by actively participating in lectures and labs, completing course readings, reviewing and practicing rehabilitation techniques with peers; Participant will gain improved American physical rehabilitation intervention practices across the lifespan based on theory, evidence based practice and application of skills in lab; Participant will participate in coursework such as kinesiology, orthopedics, neuro rehabilitation, pediatrics, musculoskeletal, cardiovascular, mental health and geriatrics; Participant will have the opportunity to tour in healthcare clinics affiliated with Creighton University and CHI Health; Participant will exhibit professional behaviors within the classroom, labs and clinical setting; Participant will demonstrate an understanding of institutional

IEP 002. Creighton Pharmacy International Summer Program (CRISP). 0 credits.

Creighton Pharmacy International Summer Program (CPISP) is for international undergraduate visiting students from a partner pharmacy educational program. Participants will partake in an on boarding orientation followed by one-week long didactic lectures and lab activities covering specific topics and skills related to pharmacy practice in general and specifics related to pharmacy practice in the United States in different settings. Participants will then be placed as part of three-week shadowing experiences in different pharmacy clinical settings. The overall three-week shadowing experiences will provide excellent examples of clinical pharmacy practice which can be applied to various settings. Didactic topics covered will include: 1. General introduction to the profession of pharmacy in the United States; 2. Cultural competency with specifics related to pharmacy education and practices in the U.S; 3.Interprofessional, intraprofessional and professionalism in the practice of pharmacy; 4. Service learning, community outreach and the role of pharmacy students/pharmacists; 5. Introduction to community and ambulatory care pharmacy practice; 6. Introduction to drug information; 7..Introduction to Nebraska law, electronic health records; 8. Introduction to medication errors; 9. Introduction to Medication Therapy Management and the Pharmacist Patient Care Process; and 10.Introduction to inpatient pharmacy practice. Lab Activities will include: 1. Compounding and community pharmacy practice activities; 2. Aseptic Technique; 3. Inpatient lab activities. 3-week Shadowing Activities will include: Clinical experiences in different pharmacy settings including community, ambulatory care clinics and inpatient settings with emphasis on cardiology, infectious disease, respiratory disease and other potential clinical areas of interest. Learning Objectives: 1. Participant will be expected to participate in the learning environment by actively participating in lectures and labs, completing readings assignments, reviewing and practicing clinical pharmacy techniques with peers; 2. Participant will develop essential knowledge and skills to contribute to his/her pharmacy education and apply knowledge gained to coursework at their home educational institution; 3.participant will develop language skills through learning environment and activities and through social interactions with Creighton faculty, staff and peers; 4.Participant will exhibit professional behaviors within the classroom, labs and clinical pharmacy setting; 5. Participant will demonstrate an understanding of institutional policies and procedures relating to patient confidentiality and safety; 6. Participant will develop an increase knowledge base and understanding of clinical pharmacy in the United States; 7. Participant will engage with interprofessional health care professionals and students to increase knowledge of scope of practice; 8. Participant will experience cultural immersion activities within the learning environment and outside during evenings and weekends. Activities include local cultural events and sports activities, other ethnic cultural activities, visiting local landmarks and attending local performing arts performances while socializing with Creighton students, faculty and staff.

IEP 003. Creighton Rehabilitation International Summer Program (CRISP). 0 credits.
Creighton Rehabilitation International Summer Program (CRISP) beginning in May annually is for international students studying occupational therapy, physical therapy or a related rehabilitation degree. Participants are undergrad students at their home institutions. Participants in the program will be taught based on and expected to meet the following objectives:•Participant will participate in lectures and labs with additional opportunities to participate in supplemental lectures online.•Participant will be expected to participate in the learning environment by actively participating in lectures and labs, completing course readings, reviewing and practicing rehabilitation techniques with peers.•Participant will gain improved American physical rehabilitation intervention practices across the lifespan based on theory, evidence based practice and application of skills in lab. •Participant will participate in coursework such as kinesiology, orthopedics, neuro rehabilitation, pediatrics, musculoskeletal, cardiovascular, mental health and geriatrics. •Participant will have the opportunity to observe in healthcare clinics affiliated with Creighton University and CHI Health. •Participant will exhibit professional behaviors within the classroom, labs and clinical setting.•Participant will demonstrate an understanding of institutional policies and procedures relating to patient confidentiality and safety.•Participant will develop essential knowledge and skills to contribute to his/her rehabilitation education and apply his/her advanced knowledge to coursework in their home country. •Participant will develop language skills through learning environment and activities and through social interactions with Creighton faculty, staff and peers. •Participant will engage with interprofessional health care professionals and students to increase knowledge of scope of practice. •Participant will experience cultural immersion activities within the learning environment and outside during evenings and weekends. Activities include local cultural events, visiting local landmarks and attending local performing arts performances while socializing with Creighton students, faculty and staff.

IEP 004. Creighton Medicine International Summer Program. 0 credits.
Learning Objectives: Participant will participate in up to 10 days of hospital rounding with physicians, residents and students at a designated CHI hospital; Participant will participate in medical lectures and clinical observations to learn application of learned knowledge in clinical medicine settings; Participant will exhibit professional behaviors within the hospital and clinical medicine setting; Participant will demonstrate an understanding of institutional policies and procedures relating to patient confidentiality and safety; Participant will develop an increase knowledge base and understanding of delivery of patient care in the United States; Participant will utilize communication skills to demonstrate understanding of medical terminology and diagnosis; Participant will develop language skills through learning environment and activities and through social interactions with Creighton faculty, staff and peers; Participant will develop essential knowledge and skills to contribute to his/her medicine education and apply his/her advanced knowledge to coursework in China; Participant will engage with interprofessional health care professionals and students to increase knowledge of scope of practice; and Participant will experience cultural immersion activities within the learning environment and outside during evenings and weekends. Activities include local Chinse cultural events, visiting local landmarks and attending local performing arts performances while socializing with Creighton students, faculty and staff.

IEP 005. Creighton Nursing Inter Sum Pr. 0 credits.
Learning objectives: The participant will be introduced to American nursing education and practice; The participant will exhibit professional behaviors within the classroom, labs, and clinical settings; The participant will demonstrate an understanding of institutional policies and procedures relating to patient confidentiality and safety; The participant will develop knowledge and skills to contribute to his/her nursing education and apply this knowledge to coursework in China; The participant will develop language skills through learning environment and activities and social interactions with Creighton faculty, staff, and peers; The participant will learn the importance of working in an interprofessional environment by engaging with members of the healthcare team; The participant will experience cultural immersion activities in both the learning environment and the community during evenings and weekends. Activities may include local Chinese cultural events, visiting local landmarks, and attend local performing arts performances while socializing with Creighton students, faculty, and staff.

IPE 001. Interprofessional Education Passport. 0 credits.
The Interprofessional Education Passport consists of student learning activities focused on meeting the core competencies for interprofessional collaborative practice and each profession's interprofessional education accreditation requirements. Interprofessional education is defined as "when students from two or more professions learn about, from and with each other to enable effective collaboration and improve health outcomes" (WHO, 2010). As a Creighton health sciences student, you must complete three IPE Passport activities to graduate. Prior to enrollment in the IPE Passport, you must successfully complete IPE 500: Introduction to Collaborative Care. In order for an activity to be approved as part of the IPE Passport, it must meet certain criteria and be approved by the IPE Curriculum Committee. P. IPE 500.

IPE 002. Interprof Educ Passport Honors. 0 credits. FA, SP, SU
Interprofessional Education Passport Honors consists of student learning activities focused on meeting the Core Competencies for Interprofessional Collaborative Practice and each profession's interprofessional education accreditation requirements and developing the student for leadership in interprofessional collaborative care. All Creighton health sciences students must complete 3 IPE Passport activities to satisfy course completion prior to graduation. In addition to meeting the three Passport activities required by the student's health professional program, IPE 002 students are required to meet additional scaffolded learning activity requirements in the Core Competencies through learning categories such as simulation, clinical learning environment, and community engagement, etc. Each student will be assigned to a faculty mentor that will oversee an individualized plan for completion. Students will cumulate the course with a Capstone Project designed and directed by the student and overseen by a faculty mentor. Through this course students will gain a deeper understanding of their own professional role and responsibilities and skills necessary to lead effective collaborative practice. P. IPE 500.

IPE 003. Interprofessional Collaborative Practice: What You Need to Know. 0 credits.
Interprofessional Collaborative Practice: What You Need to Know is a 1-hour online primer on the basics of interprofessional education and collaborative practice from a national perspective and also provides an overview of what Creighton University's Center for Interprofessional Practice, Education and Research (CIPER) does to support and innovate interprofessional education and collaborative practice. This course is a prerequisite to IPE 004 Introduction to Collaborative Care which offers 8 CE/CMEs and provides more depth to the topic. The course is intended to introduce concepts for both education and practice related to interprofessionalism. The program is delivered to participants using a distance education platform. The didactic lecture is electronically captured and packaged with written materials (references, case studies, self-evaluation quizzes).

IPE 004. Introduction to Collaborative Care for Educators and Professionals. 0 credits.
IPE 004 is an introductory course designed for health care faculty and professionals to learn key concepts of building and leading a collaborative health care team. The course is offered in a self-paced online format with a competency-based approach. Each lesson builds on previous content. Faculty and professionals will be introduced to: Interprofessional education and collaborative practice terminology; Core Competencies for Interprofessional Collaborative Practice; Foundations of effective health care teamwork; and Leading a collaborative health care team. The course offers eight (8) CMEs through Creighton University's Health Sciences Continuing Education, which has joint accreditation from the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE) and the American Nurses Credentialing Center (ANCC), the first university to receive this accreditation.

IPE 413. Developing Care-Vulnerable Population:Interprofessional Collaborative Approach-Health Promotion. 1 credit.
This course will provide students an opportunity to collaborate to address community identified health needs in partnership with a community partner. The focus of the course is to implement interprofessional collaborative care to address health status of a population in a community setting. P. Nursing - enrollment in graduate nursing; Physical Therapy, Occupational Therapy, and Pharmacy - successful completion of second year of professional curriculum.

IPE 500. Introduction to Collaborative Care. 0-0.5 credits.
This course is an introduction to the concepts of interprofessional collaborative practice preparing students across the health sciences to engage in interprofessional education and practice activities during their tenure at Creighton and beyond. In this course health sciences students will gain knowledge in the Core Competencies for Interprofessional Collaborative Practice, versed in the basics of team work in the context of health care and begin to develop skills in team-based clinical reasoning. IPE 500 is a prerequisites to the IPE 001 IPE Passport. Successful completion of IPE 500 is required to be able to complete the IPE 001 IPE Passport.

IPE 512. Cultural Immersion and Experiential Learning in China. 3 credits.
The focus of this course is to increase participants' cultural awareness and sensitivity with an introduction to cultural competence and facilitate their leadership development for societal and global concerns through interprofessional experiential learning in China. Participants will engage in a series of seminars centered on preparation for successful experiential learning in China prior to a week-long international experience. Through immersion and engagement in various professional activities such as observation, advocacy for evidence-based rehabilitation practice and consultation and/or nursing practice and consultation, participants are expected to enhance cultural awareness and introduction to cultural sensitivity and foster leadership skills for international health concerns. Such an experiential learning immersion will assist participants to provide culturally sensitive care and assume leadership roles at the international level. A professional dissemination of the experiential learning experience is expected at the end of the course.

IPE 515. Interprofessional Palliative Care. 1-2 credits.
The course focus is interprofessional collaborative care to address palliative care needs of patients. Key topics: Palliative care trajectories, ethics, communication, symptom management, spirituality/cultural care, and grief/loss/bereavement. Learning methodology: online readings, discussion boards and virtual simulation. Upon successful completion (3) IPE passport activities are earned. P. IPE 500.

IPE 520. Interprofessional Childhood Motor Play and Development. 1 credit.
This course includes lecture and experiential learning opportunities for graduate Physical Therapy and Occupational Therapy students to work inter-professionally with children in organized community programs. Students will enhance their understanding of working with individuals from other professions and strengthen their knowledge of functional movements of children. P. IPE 500.

IPE 530. Foundations of Ethical Care. 1 credit. FA, SP
This course will cover the fundamental aspects of ethics in healthcare, emphasizing ethical decision-making and the application of ethical principles. The course also provides an overview of professional codes of ethics across various healthcare disciplines, with a focus on protecting patient autonomy through regulations like HIPAA and the complexities of obtaining informed consent. Participants will learn to respect patients' rights and decision-making capacities while addressing ethical issues in team-based care. P. IPE 500.

IPE 531. Ethics in Professional Practice. 1 credit. FA, SP
This course explores complex ethical and legal challenges in healthcare by examining key legal standards, ethical decision-making in resource-limited settings, discharge planning, and end-of-life considerations. Topics include advanced directives, resource rationing, EMTALA compliance, and the ethics of life-sustaining treatments. By the course's end, participants will gain a deeper understanding of ethical principles to navigate diverse healthcare situations confidently. P. IPE 500.

IPE 532. Ethics in Health Systems. 1 credit. FA, SP
This course focuses on strategies for advocating equitable care, principles of research ethics, and evidence-based practice. Participants will learn to balance individual rights with community health, addressing ethical issues in vaccination, quarantine, and public health interventions. The module covers global health ethics, the impact of technology and digital health on ethics, ethical considerations in genetic testing and personalized medicine, and examines future trends and challenges in healthcare ethics. P. IPE 500.

MPS 531. Chemical Basis Drug Action I. 3 credits.
This course instructs the student on the chemical basis for drug behavior, both in vivo and in vitro. General chemical principles, physicochemical properties, and drug-receptor interactions are used to derive structure-activity relationships for important and commonly encountered classes of drugs. This permits the understanding of pharmacological and biopharmaceutical profiles of currently available drug products, and explains the scientific rationale behind their therapeutic use. Chemically based therapeutic case studies and structurally based therapeutic evaluations are utilized to help students develop a scientific basis for rational therapeutic decision-making. This practice-oriented approach, which emphasizes the relevance of chemistry to contemporary pharmacy practice, gives students the skills necessary to predict biological properties and therapeutic activities of future drug molecules. This course builds upon previously acquired knowledge of biochemistry, pharmaceutics and basic pharmaceutical sciences principles, and compliments concepts being addressed in pharmacology. P. BMS 301.

MPS 532. Chemical Basis Drug Action II. 2 credits.
A continuation of MPS 531/PHA 337.

MPS 543. Basic Pharmacokinetics. 2 credits.
Pharmacokinetics is the mathematics of the time course of Absorption, Distribution, Metabolism, and Excretion (ADME) of drugs in the body. The biological, physiological, and physicochemical factors which influence the transfer processes of drugs in the body also influence the rate and extent of ADME of those drugs in the body. In many cases, pharmacological action, as well as toxicological action, is related to plasma concentration of drugs. Consequently, through the study of pharmacokinetics, the pharmacist will be able to individualize therapy for the patient.

MPS 544. Introduction to Research Methods and Biostatistics. 3 credits.
Students will identify and interpret research questions, hypotheses, variables, sampling methods, research designs, as well as, descriptive and inferential statistics. The emphasis is to evaluate and assess the validity and significance of these research components so there is appropriate interpretations of research results. The goal is for students to become critical readers and users of research so they can practice evidence-based pharmacy and contribute to pharmacy's knowledge base. Students will learn to interpret the validity and the statistics of a research report, but will not necessarily learn to conduct research or perform statistical calculations.

MPS 600. Ocular Pharmacology. 2 credits.
Utilization of knowledge of physiology, biochemistry and anatomy of the eye to develop an understanding of etiology and pharmacological therapy of various ocular diseases. Course content will include a review of anatomy, physiology and biochemistry of the eye, pharmacokinetics and drug delivery relevant to ocular therapy, etiology and pharmacological treatment of ocular diseases such as glaucoma, uveitis, cataract, retinopathy and age-related macular degeneration and cataract. Ocular effects of systemic drugs and ophthalmic toxicology will be examined, in addition to examining advances in ocular therapies.

MPS 602. Analytic Aspects of Pharmaceutical Sciences Research. 3 credits.
This course covers the theory, instrumentation and application of commonly used laboratory equipment, including, absorption spectroscopy (UV, visible and infrared); mass spectroscopy (MS), high pressure liquid chromatography (HPLC) and nuclear magnetic resonance (NMR), amongst others. The course will combine lectures with hands-on laboratory exercises/demonstrations by Pharmacy Sciences faculty.

MPS 603. Introduction to Pharmaceutical Materials Science. 1 credit.
This course provides an introduction to the excipients and inactive ingredients involved in pharmaceutical preparations. The physicochemical, toxicologic, and regulatory properties of common excipients will be discussed. In addition, the functional roles of common pharmaceutical excipients will be discussed.

MPS 608. Leadership Attributes for Professional and Personal Growth. 3 credits.
Learners will gain an understanding of the theoretical and practical aspects of leadership necessary for success in both their personal and professional lives. They will review and discuss various theories and approaches to leadership and personal and professional growth in a variety of scenarios to understand their development as leaders.

MPS 617. Advanced Pharmaceutics. 3 credits.
This course will provide an in-depth study of the physical and chemical principles which are involved in the development, formation and stabilization of selected pharmaceutical dosage forms for optimization of drug bioavailability and therapeutic utility.

MPS 621. Health Systems and Patient Safety. 3 credits.
This course examines structural, economic, service delivery, professional, and patient factors influencing contemporary pharmacy practice. This course emphasizes development of a culture of best practices in patient safety. Included are concepts of safe patient care systems as well as public health principles and practices in the context of public responsibility.

MPS 633. Research Methods. 1-3 credits.
Laboratory rotations in which graduate students perform or observe methods used in pharmaceutical and administrative sciences research. The value of the methods and their applications to the research efforts of the pharmaceutical sciences faculty are described in detail. P. DC.

MPS 634. Pharmaceutical Dosage Forms and Drug Delivery Systems. 2-3 credits.
Basic principles of pharmaceutical dosage forms and drug delivery systems are taught with respect to formulating drugs for bioavailability enhancement and drug targeting. Pertinent pharmaceutical examples that are discussed include: Oral, parenteral, transdermal, aerosol, etc., with emphasis placed on their importance, formulation considerations and ongoing research.

MPS 652. Pharmacoeconomics. 3 credits.
This course introduces fundamental pharmacoeconomic topics, defines the terminology used in pharmacoeconomic research, and gives many examples using case studies. Students completing this course should be able to understand, interpret, and determine the usefulness of pharmacoeconomic research articles and also be able to design a pharmacoeconomic decision tree analysis.

MPS 691. Pharmaceutical Science Seminar. 1 credit.
Seminar in selected subjects for pharmaceutical sciences graduate students. P. DC.

MPS 692. Directed Independent Study. 1-5 credits.
Supervised independent projects that may include laboratory work, assigned readings, research papers, etc. Available in toxicology, biopharmaceutics, medicinal chemistry, pharmacodynamics and pharmacokinetics. P. Undergraduate or graduate stdg. and DC.

MPS 693. Directed Independent Research. 1-5 credits.
Supervised independent research for motivated students to become involved in ongoing original research projects of the pharmaceutical sciences faculty. P. Undergraduate or graduate stdg. and DC.

MPS 791. Jrnal Club: Dev in Pharm Scien. 2 credits.
The field of pharmaceutical sciences is rapidly changing as exemplified by paradigm shift in drug discovery and development. Therefore, this course will help students develop a broader understanding of the latest developments in drug discovery and development processes and their future implications.

MPS 792. Pharmaceutical Sciences Discussion Series. 1-2 credits.
Graduate students in Pharmaceutical Sciences will learn how to read journal articles for optimum retention, critically evaluate the data, and objectively determine the paper's contribution to the over-all body of knowledge. In addition they will gain valuable presentation and public speaking skills.

MPS 793. Pharmaceutical Sciences Presentation Series. 1-2 credits.
This course focuses on scientific communication of research material in various situations. Students will read and understand journal articles for optimum retention, critically evaluate the data, and objectively determine the paper's contribution to the over-all body of knowledge. Emphasis will be on presenting information/research data in an appropriate and effective manner.

MPS 797. Master's Directed Independent Research. 1-4 credits.
Supervised original research. P. DC.

MPS 799. Master's Thesis. 1-8 credits.
Review of the literature and research data; writing of the thesis. Student must register for this course in any term when engaged in formal preparation of the Master's thesis; however, eight credit hours are the maximum applicable toward the degree. P. DC.

MPS 800. Solid-State Pharmaceutics. 3 credits.
Most of the drug molecules with either large or small molecular weights are produced and stored as solid materials. The characteristics of these pharmaceutical solids can affect solubility, dissolution, stability, flow properties, compressibility and hygroscopicity. This course will provide the students with a wide range of studies on pharmaceutical solids. This will include the definition of a solid, chemical bonding in solids, determination of their physical properties including polymorphs and pseudo polymorphs, physical transformations between polymorphs and solvates, chemical reactions in solid-state and solid-solid reactions in pharmaceutical products and process.

MPS 897. Doctoral Dir Independent Study. 1-6 credits.
Supervised independent research for motivated students to become involved in ongoing original research projects of the pharmaceutical sciences.

OTD 057. American Healthcare System. 0 credits.
Along with the Brunel's focus on "preparing students for the challenges of employment within a changing health and social care system" this course focuses on policy and payment in United States (U.S.) of America to meet the ACOTE standards of B.4.10, B. 5.32, B. 7.2. B. 7.3 and B 7.4. Students receive an overview of the American practice system and learn how federal and state legislation/policy is created. Students study national and state requirements for credentialing, licensure, certification, or registration in the U.S. An overview of the payment system is presented grounded with specific details about occupational therapy practice in the U.S. Information is presented on how to document for payment based on the various health care systems in the U.S. Finally, an overview of current trends in the U.S. health care system is discussed and to integrate the material students compare trends to those in the United Kingdom (UK).

OTD 102. Exploring Occupational Therapy as a Career. 3 credits.
This course is designed for individuals who are considering a career in occupational therapy. The course addresses a broad overview of the professional of occupational therapy and provides experiences to discern if occupational therapy is one's calling. P. One semester of college experience.

OTD 215. Medical Terminology. 1 credit. (Same as PMC 215)
Medical Terminology is a critical part of language and communication used by health care practitioners. This self-directed course is designed for students planning a career in the health services and related fields. Course content includes a study of basic medical terminology. Students will construct and decipher terms using prefixes, suffixes, word roots, combining forms, special endings, plural forms, and abbreviations related to body systems, cavities, planes, and positions. Competency is evaluated throughout the semester through online testing.

OTD 302. Occupations and Occupational Therapy. 3 credits.
This course will introduce students to occupation as a fundamental concept of the profession of occupational therapy. Students will gain an understanding of the history and philosophical base of the profession, the domain of practice, and practice trends. Official documents of the American Occupational Therapy Association, World Health Organization, and other relevant organizations will be explored. Students will be introduced to practice models of occupation and disability theory. P. Admission to the EOTD program or IC. CO: All other required courses in this semester.

OTD 306. Health Conditions. 0-3 credits.
This course is an overview of health conditions that are pertinent to the practice of occupational therapy across the lifespan. Students will analyze etiology, signs, symptoms, pathophysiology, psychopathology, and the impact of pharmacological interventions on select health conditions and occupational performance. P. Admission to the EOTD program or IC; CO: All other required courses in this semester.

OTD 310. Introduction to Clinical Education Seminar. 0.5 credits. FA
This course introduces the policies, procedures and processes that occur in the clinical education portion of the curriculum. Within this course, student's will become familiar with the Level I and Level II Fieldwork Manual and will apply this foundational knowledge to the remainder of their clinical education experiences throughout the program. P. Admission to OTD program or IC.

OTD 314. Occupation and Health: Population Perspectives. 3 credits.
This course will examine the role of occupation in enhancing the health of populations through health promotion, health education, and prevention of illness. Key concepts of population health, needs assessment, health promotion, and health behavior will be applied to develop local and global population-based approaches for meeting the health needs of individuals and communities. P. Admission to the EOTD program or IC. CO: All other required courses in this semester.

OTD 316. Professional Practice and Ethical Formation Seminar. 4 credits.
This course will promote professional formation through the integration of foundational concepts and skills necessary for competent and ethical practice. Students will develop basic skills in clinical and ethical reasoning, assessment and intervention, client interaction and education. P. Admission to the EOTD program or IC. CO: All other required courses in this semester.

OTD 317. Occupational Therapy in Mental Health. 4 credits.
This course examines occupational therapy in mental health practice, as well as the influence of psychosocial factors on occupational performance. Theory-driven practice is valued with the introduction of selected psychosocial frames of reference and/or conceptual models of mental health practice to guide the evaluation process, the selection of assessment tools, and the design of therapeutic interventions. Use of self as a therapeutic agent and group process skills will be emphasized. Graded Satisfactory/Unsatisfactory. P. Successful completion of all required professional coursework preceding the offering of this course; CO: All other required courses in this semester.

OTD 318. Level IA Fieldwork: Mental Health. 0.5 credits.
In accordance with occupational therapy accreditation standards, this course will introduce students to the fieldwork experience, facilitate application of knowledge to practice, and foster students' understanding of client needs. The focus is to immerse students in a setting where they will examine how psychological and social factors influence occupational performance in actual situations. Students will engage in directed observation and participation in selected aspects of the occupational therapy process. This course orients students to policies, procedures, and required documentation related to clinical education. Graded Satisfactory/Unsatisfactory. P. Successful completion of all required professional coursework preceding the offering of this course; CO: All other required courses in this semester.

OTD 324. Applied Kinesiology. 0-3 credits.
This course presents foundational biomechanical and kinesiological principles necessary for the assessment of movement in relation to occupational performance. Students will apply knowledge and skills in musculoskeletal screening and assessment for people with various health conditions. Students will demonstrate the ability to interpret manual muscle testing and range of motion assessment results in order to develop intervention plans using therapeutic exercise. P. Successful completion of all required professional coursework preceding the offering of this course; CO: All other required courses in this semester.

OTD 330. Spanish for Health Professionals. 2 credits. (Elective)
This course offers a concise introduction to Spanish grammar, vocabulary and culture for students whose personal or professional goals include a working knowledge of Spanish. In addition to emphasizing basic communication, this course will give special attention to the vocabulary needs of those individuals involved in the health professions.

OTD 333. Upper Extremity Evaluation and Intervention I. 0-3 credits.
This is the first in a two-course sequence that focuses on the occupational therapy process for persons with upper extremity conditions across the lifespan. Students will gain knowledge and skills in assessment and intervention, including orthotic selection and fabrication in various practice settings. Occupational engagement and continuum of care are emphasized in the course. P. Successful completion of all required professional coursework preceding the offering of this course; CO: All other required courses in this semester.

OTD 334. Foundations of Research. 3 credits.
This is the first of two required research classes in the entry-level Doctor of Occupational Therapy program. This course will build students' technical skills related to reading, understanding, and critically analyzing the results of published research studies. It will address quantitative and qualitative designs, measurement and instrumentation, sampling, and basic principles of quantitative and qualitative analyses. The course will emphasize the importance of these concepts for evidenced-based practice in occupational therapy. P. Successful completion of all required professional coursework preceding the offering of this course.

OTD 341. Neuroanatomy. 3 credits.
In this course, students will identify and describe the major structural and functional features of the nervous system, with a focus on the brain and the spinal cord. Students will gain an in-depth understanding of brain functioning and its dynamic relationship with occupation. P. Admission to the EOTD program or IC: All other required courses in this semester.

OTD 342. Clinical Human Anatomy. 0-4.5 credits.
This course provides an overview of clinical human gross anatomy and integrates knowledge of neuroanatomy and health conditions. Understanding the anatomy of the human body aids the occupational therapist in thorough assessment and design of effective interventions and provides knowledge of how anatomy influences occupational performance. A lab section of this course supplements the anatomy learning experience by allowing students the opportunity to apply concepts on human cadavers. P. Successful completion of all required professional coursework preceding the offering of this course; CO: All other required courses in this semester.

OTD 355. Physical Rehabilitation I: Evaluation. 0-3 credits.
This course is the first in a three-course sequence focusing on physical rehabilitation. Clinical reasoning and theory-driven practice are valued with the introduction of selected physical rehabilitation frames of reference and/or conceptual models of occupational therapy practice to guide the evaluation process, the selection of assessment tools, and the design of therapeutic goals. Students will demonstrate competence with documentation and billing requirements. P. Successful completion of all required professional coursework preceding the offering of this course; CO: All other required courses in this semester.

OTD 356. Physical Rehabilitation II: Neurorehabilitation. 0-4 credits.
This course is the second in a three-course sequence focusing on physical rehabilitation. It incorporates the occupational therapy process and centers on the theoretical foundations of and intervention for clients with neurologic conditions. Students will interpret evaluation results to design client-centered and evidence-based intervention plans that promotes occupational engagement. Assistive technologies commonly used on physical rehabilitation practice settings will be explored. This course will allow students to build upon knowledge of documentation and reimbursement from previous coursework. P. Successful completion of all required professional coursework preceding the offering of this course; CO: All other courses in this semester.

OTD 386. Institute for Latin American Concerns Immersion. 3 credits.
Occupational therapy students will participate in a 2-week cross-cultural experience in the Dominican Republic focusing on the aspects of occupational therapy treatment in an international setting. A major focus of the experience will be exploration of the role of occupational therapy in an underserved global health setting utilizing the tenets of the International Classification of Functioning, Disability and Health (ICF). Students will engage in cultural exploration of the Dominican culture utilizing the Canadian Occupational Performance Measure and provide health-related education to multiple community partners. Implementation of treatment, patient education, reflection and discussion are the main methods used to promote student learning during the experience.

OTD 390. Level IB Fieldwork. 1 credit. SU
In accordance with occupational therapy accreditation standards, this course will facilitate application of knowledge to practice and foster students' understanding of client needs. The focus is to immerse students in a practice setting of interest through directed observation and participation in selected aspects of the occupational therapy process. P. Successful completion of all required professional coursework preceding the offering of this course.

OTD 399. Directed Independent Studies. 1-6 credits. (Elective)
This course is an opportunity for motivated occupational therapy students to become involved in a course of study under the direction and guidance of a faculty in order to: (a) pursue, in depth, an area covered more generally in the curriculum; (b) explore a topic not normally covered in the curriculum; (c) provide occupational therapy services to diverse and underserved populations, or (d) assist with or conduct original problem-oriented or technique-based research in an occupational therapy area of interest. This study may be in any occupational therapy-related area of practice. In all cases, it is the student's responsibility to fully identify the topic and to acquire enough information to ensure its worthiness for independent study. A maximum of three semester hours may be taken in OTD 399.

OTD 403. Neuro-occupation. 2 credits. SP
This course is an overview of the reciprocal relationship between the brain and occupation. Students will apply, analyze, and evaluate evidence and theories of foundational concepts including neuroscience, neuroplasticity, occupational behavior, and systems and chaos theories, among others. Students will develop intervention plans that support the mutual importance of occupation and neuroscience.

OTD 406. Management and Program Development. 4 credits.
This course will focus on the development and management of occupational therapy services for persons, groups and/or populations. Essential management and leadership skills will be explored and developed to prepare students to lead across all practice settings and environments. Students will explore the health care system and apply leadership strategies to promote, develop, and expand services related to occupational therapy. Financial management, strategic planning, program evaluation and improvement, and locating and securing grants will be applied to the process of business and program development. Students will explore health care regulations and compliance issues.

OTD 417. Disability and Health Care Policy. 3 credits.
This course involves the study of disability and health care policies and their effects on occupational therapy practice. Students will critically examine government and regulatory systems; professional societies; economic, political, and professional forces; and cultural and social values that influence the development of health care policy and contemporary practice. Students will apply advocacy skills to promote the profession and the just treatment of people with disabilities. P. Successful completion of all required coursework preceding the offering of this course; CO: All other required courses in this semester.

OTD 420. Exploring Spirituality in OT Practice. 1 credit. (Elective)
This course will explore concepts of spirituality in the OT literature and by writers from medicine, theology, and psychology. Students will actively explore their own spiritual development. They will then study how spirituality is experienced by individuals with acute or chronic illness and disability. Lastly students will apply their knowledge to occupational therapy interventions. In brief, this course will consider spirituality to be about a person's relationship with his/her inner self, with other people, and with the transcendent. A distinction will be made between spirituality and religion. P. Successful completion of year one.

OTD 421. Occupational Therapy Practice in Maternal Health and the Neonatal Intensive Care Unit. 1 credit. FA
This course will focus on occupational therapy practice in maternal health care, transition to parenting, and the neonatal intensive care unit (NICU). Concepts related to occupational therapy's role with both mother and baby in the prenatal and postnatal period will be addressed in this course, including promotion of healthy pregnancy, postnatal recovery, and transition to caring for a newborn. The impact of complications during this period such as bedrest, postpartum depression, premature delivery and infant loss will be discussed. Students will develop a deeper understanding of neonatal development, conditions affecting the premature infant, and the NICU environment. Occupational therapy interventions for the premature infant such as sensorimotor, feeding, positioning, and developmental care will be addressed, as well as strategies to support the family throughout the NICU stay. P. OTD 317, OTD 403, OTD 435 and OTD 436.

OTD 423. Occupational Therapy with Older Adults. 3 credits.
This course focuses on the unique characteristics and needs of older adults. Contemporary practice issues related to productive aging, including interprofessional practice, will be emphasized. Students will examine various service delivery models and resources to support older adults and their caregivers. Evaluation and intervention to promote safety and occupational engagement in the home and community will be applied. Theories of aging, changes in body structures and functions associated with aging, and end-of-life issues will also be addressed. Students will examine current policies affecting geriatric practice and payment. P. Successful completion of all required professional coursework preceding the offering of this course; CO: All other required courses in this semester.

OTD 426. Introduction to Maternal and Infant Health. 1 credit. FA
This course will focus on developing a broad understanding of maternal and infant health, health care systems, policy and advocacy, and interdisciplinary practice. Concepts related to occupational therapy's role with both mother and baby in the perinatal period will be addressed in this course including stages of pregnancy, mortality and morbidity, and the caregiver-infant dyad. Students will develop a deeper understanding of the current trends in maternal and infant health in the United States and globally, as well as increase their awareness of special topics involving this population. P. OTD 317 and acceptance to the OTD Maternal and Infant Health Specialty Track.

OTD 427. Occupational Therapy Practice in Pregnancy, Postpartum, and Parenting Occupations. 1 credit. SP
This course will focus on occupational therapy practice in maternal health care and the transition to parenthood in the inpatient, outpatient, and community setting. Concepts related to occupational therapy's role in physical wellness during pregnancy and the postpartum period will be addressed in this course, including promotion of healthy pregnancy, postnatal recovery, and transition to caring for a newborn. The impact of medical complications during this period such as bedrest, premature delivery, Cesarean Section, and postpartum morbidity will be discussed. Students will develop a deeper understanding of the physical and hormonal changes that occur during pregnancy and postpartum recovery. Occupational therapy interventions for the core, pelvic floor, and upper extremities will be addressed, as well as strategies to promote proper body mechanics during parenting occupations. P. OTD 317, OTD 435 and acceptance to the OTD Maternal and Infant Health Specialty Track.

OTD 428. Occupational Therapy Practice in Perinatal and Infant Mental Health and Wellness. 1 credit. SU
This course will focus on occupational therapy practice in maternal and infant mental health and wellness, role transition and occupational balance for caregivers, caregiver/infant attachment, and transition to parenting. Occupational therapy's role with both mother and baby in the prenatal and postnatal period will be addressed in this course, including development of a postpartum plan, perinatal mood disorders, matrescence, and stress management. Students will develop a deeper understanding of occupational therapy interventions for perinatal mood disorders, occupational imbalance, attachment, and addressing relationships and intimacy with the postpartum population. P. OTD 317, OTD 403, OTD, 435, OTD 436 and acceptance to the OTD Maternal and Infant Health Specialty Track.

OTD 429. OT Practice in the NICU and Early Intervention. 1 credit. FA
This course will focus on occupational therapy practice in the neonatal intensive care unit (NICU), infant development, early intervention, and outpatient care. Students will develop a deeper understanding of neonatal and full-term newborn development, conditions affecting the premature infant, and the NICU environment. Occupational therapy interventions in the NICU will be addressed, such as sensorimotor, feeding, positioning, and developmental care. Strategies to support the family throughout the NICU stay and transition to home will be discussed, as well as follow up care, medical complexity, and early intervention. P. OTD 317, OTD 403, OTD 435, OTD 436 and acceptance to the OTD Maternal and Infant Health Specialty Track.

OTD 433. Upper Extremity Evaluation and Intervention II. 3 credits.
This is the second in a two-course sequence that focuses on the occupational therapy process for persons with upper extremity conditions across the lifespan. Students will apply clinical reasoning in selecting and implementing assessments and interventions in order to safely administer physical agent modalities and other preparatory methods that enhance occupational engagement. Competency practicums will be implemented as required to meet regulatory guidelines. P. Successful completion of all required professional coursework preceding the offering of this course; CO: All other required courses in this semester.

OTD 434. Research Proposal. 3 credits.
This is the second of two required research classes in the entry-level Doctor of Occupational Therapy program. In this course, students develop a meritorious and ethically sound research proposal which addresses a research question of interest to occupational therapy practice, policy, advocacy, education, or related topic. Students will identify a research question, develop a proposal to answer the research question, and improve their scholarly writing skills.

OTD 435. Occupational Therapy with Children and Youth I. 3 credits.
This course introduces students to occupational therapy practice with children and youth. It focuses on childhood development and the evaluation process, highlighting observation skills, interprofessional collaboration, and working with families and communities. Students will examine childhood occupations and developmental milestones. They will explore theories and principles of assessment and intervention for frames of reference commonly used in pediatric occupational therapy practice.

OTD 436. Occupational Therapy with Children and Youth II. 0-4 credits.
This is the second in a two-course sequence focused on the occupational therapy process with children and youth. It focuses on occupation-based interventions, activity analysis and use of technology in practice. Coordination of care in a variety of practice settings and service delivery models will be examined. Students will apply knowledge of theories and frames of reference to develop strategies for evaluation and intervention in specific performance areas and with selected pediatric health conditions.

OTD 442. Critical Analysis of Occupational Therapy Practice. 3 credits. SP
In this course, students will gain an understanding of external and internal criticisms of the profession of occupational therapy. Through student-driven learning activities, the course will emphasize the judicious use of evidence-based methods in evaluation and intervention in order to contribute to the ongoing refinement of the profession. P. Successful completion of all required professional coursework preceding the offering of this course; CO: All other required courses in this semester.

OTD 457. Physical Rehabilitation III: Interventions and Outcomes. 0-4 credits.
This course is the third in a three-course sequence focusing on physical rehabilitation. It incorporates the occupational therapy process and centers on the theoretical foundations and intervention of clients with orthopedic, cardiac, pulmonary, and other health conditions. Students will formulate intervention plans that will include a final synthesis of how assistive technologies are used to enhance occupational performance. Students will be introduced to advanced practice areas and build upon knowledge of documentation and reimbursement from previous coursework. P. Successful completion of all required professional coursework preceding the offering of this course; CO: All other required courses in this semester.

OTD 460. Clinical Education Seminar I. 1.5 credit.
This course is the first of a two-course sequence designed to provide structure and guidance to students for the processes of Level I and Level II fieldwork and the Doctoral Capstone Experience and Project. Official documents of the American Occupational Therapy Association and policies related to clinical education will be discussed. Additionally, students will engage in self-directed personal and professional exploration of their identity as occupational therapy practitioners. Graded Satisfactory/Unsatisfactory. P. Successful completion of all required professional coursework preceding the offering of this course.

OTD 461. Clinical Education Seminar II. 1.5 credit.
This course is the second in a two-course sequence designed to provide structure and guidance to students for the processes of Level I and Level II fieldwork and the Doctoral Capstone Project. Official documents of the American Occupational Therapy Association and policies related to clinical education will be discussed. Additionally, students will engage in self-directed personal and professional exploration of their identity as occupational therapy practitioners. Graded Satisfactory/Unsatisfactory. P. Successful completion of all required professional coursework preceding the offering of this course.

OTD 481. Level II A Fieldwork. 12 credits.
Students will apply their understanding of occupation, professional practice, professional identity, leadership, and Ignatian values during a 12-week, full-time fieldwork placement. Students will develop entry-level competency as a generalist practitioner at their site by the conclusion of this experience. Graded Satisfactory/Unsatisfactory. P. Successful completion of all required professional coursework preceding the offering of this course; CO: All other required courses in this semester.

OTD 490. Level IC Fieldwork. 1 credit. FA
In accordance with occupational therapy accreditation standards, this course will facilitate application of knowledge to practice and foster students' understanding of client needs. The focus is to immerse students in a practice setting of interest through directed observation and participation in selected aspects of the occupational therapy process. Graded Satisfactory/Unsatisfactory. P. Successful completion of all required professional coursework preceding the offering of this course; CO: All other required courses in this semester.

OTD 491. Level ID Fieldwork. 1 credit. SP
In accordance with occupational therapy accreditation standards, this course will facilitate application of knowledge to practice and foster students' understanding of client needs. The focus is to immerse students in a practice setting of interest through directed observation and participation in selected aspects of the occupational therapy process. Graded Satisfactory/Unsatisfactory. P. Successful completion of all required professional coursework preceding the offering of this course; CO: All other required courses in this semester.

OTD 564. Professional Identity and Ethical Perspectives. 3 credits.
This course will advance reflective practice and the making of "right" choices and decisions in the delivery and promotion of occupational therapy within the interdisciplinary health care team. Students will cultivate professional identity by reflecting on level II A fieldwork and examining future professional obligations and responsibilities. A framework for exploring the pragmatic, moral, and spiritual dimensions of occupational therapy practice will be presented. Ethical reasoning, critical thinking, and discernment will be further developed using ethically and clinically challenging practice case examples, the American Occupational Therapy Association's Ethics Commission Advisory Opinions, and the Code of Ethics and Ethics Standards to inform decision-making. Students will reflect on their professional identity as educators, as they explore principles and skills needed to work in academic settings and as fieldwork educators. P. Successful completion of all required professional coursework preceding the offering of this course; CO: All other required courses in this semester.

OTD 571. Level II B Fieldwork. 12 credits.
Students will apply their understanding of occupation, professional practice, professional identity, leadership, and Ignatian values during a 12-week, full-time fieldwork placement. Students will develop entry-level competency as a generalist practitioner at their site by the conclusion of this experience. Graded Satisfactory/Unsatisfactory P. Successful completion of all required professional coursework preceding the offering of this course; CO: All other required courses in this semester.

OTD 574. Professional Competency. 0.5 credits.
This course is designed to meet the doctoral-level educational standard of the American Council of Occupational Therapy Education, which mandates that students successfully complete a competency requirement before commencing the doctoral experiential component. Students will demonstrate both didactic and clinical competence. This course offers a structured way to prepare for the National Board of Certification for Occupational Therapy certification exam. Graded Satisfactory/Unsatisfactory. P. Successful completion of all required professional coursework preceding the offering of this course; CO: All other required courses in this semester.

OTD 599. Directed Independent Study. 1-4 credits. (Elective)
This course offers the opportunity for doctor of occupational therapy students to become involved in a course of study under the direction and guidance of a faculty member in lieu of a portion of the professional rotation requirements of the OTD program. Students may choose to 1) pursue, in depth, an area covered more generally in the curriculum; 2) explore a topic not normally covered in the curriculum; 3) provide occupational therapy services to diverse and underserved populations; or 4) assist with or conduct original problem-oriented or technique-based research in an occupational therapy area of interest. This study may be in any occupational therapy-related area or practice. In all cases, it is the student's responsibility to fully identify the topic and to acquire enough information to ensure its worthiness for independent study. A maximum of 4 semester hours can be taken in OTD 599. P. OTD 571, OTD 574.

OTD 602. Professional Competency. 0.5 credits.
This course is designed to offer a structured approach to prepare for the National Board for Certification in Occupational Therapy certification exam. Didactic and clinical components from previous courses are reviewed, integrated, and applied to select practice exams. Students are expected to achieve satisfactory practice exam scores to achieve course completion.

OTD 603. Doctoral Capstone. 16 credits. SP
The Doctoral Capstone is designed for students to build upon their entry-level competence as generalist practitioners to achieve in-depth knowledge in one or more of the following: clinical skills, research skills, administration, program development and evaluation, policy development, advocacy, education, or leadership through a combination of a doctoral experience and a doctoral capstone project. Students will actualize individualized specific learning objectives with mentorship from a content expert. Evidence of synthesis of in-depth knowledge gained throughout the Doctoral Capstone is disseminated through a culminating capstone project.

OTD 604. Occupational Therapy Research Practicum. 1 credit.
Occupational Therapy in Research Practicum provides an opportunity for occupational therapy students to conduct and disseminate scholarly projects, under the direction and guidance of a faculty member. This course immerses students in an applied research experience where the student will be able to develop skills in research design, data collection, data management, data analysis, and scholarly writing. A faculty member may involve the student in their own ongoing research or supervise the student in independent research activities appropriate to the student's interests and skills. This course is structured as a contact in which the student and faculty advisor establish specific learning objectives, a defined scope of work, and specific scholarly dissemination products to be completed which may include a presentation or publication. Students can repeat this course for up to 2 credits. P. OTD 334; Acceptance into OTD Research Specialty track.

PHA 213. Human Anatomy for Pre-Pharmacy Students. 3 credits.
Pre-pharmacy students will learn cellular, tissue, organ and system level anatomical structures, with emphasis on using anatomical knowledge as a foundation for pharmacist-provided patient care. P. BIO 202 and BIO 201 or equivalent.

PHA 300. Pharmacogenomics in Disease Management. 2 credits. (Pharmacy Elective Course)
Many patients fail to respond completely to the drugs they are given, and others manifest often severe adverse effects. Obviously, a better fundamental understanding of the nature of genetic predisposition to diseases as well as drug action is essential for future progress in healthcare. Drugs may interact specifically and selectively with the genetic properties of an individual. Pharmacogenomics predicts how an individual's genetic inheritance will affect the body's response to drugs. This course will deal with fundamental concept of pharmacogenomics, its application to disease management and patient care, and future trends. P. PHA 301.

PHA 301. Principles of Biochemistry for Pharmacy. 3 credits.
This course introduces pharmacy students to the chemistry of biological systems. Key topics include structure of biological macromolecules and their building blocks, function of biochemically important molecules, metabolism for energy storage or construction of biomolecules, and coordinated regulation of metabolism. Examples of drug action with respect to metabolism will be included throughout. P. CHM 323 and CHM 324.

PHA 310. Human Anatomy for Pre-Professionals. 3 credits.
This is a survey course for pre-health professions where students will learn cellular, tissue, organ and system level anatomy, with an emphasis on the application of this knowledge as it relates to the health professions. Structure/function relationships, clinical cases, and anatomical terminology will be emphasized. P. BIO 201 or BIO 202 (both preferred).

PHA 311. Human Anatomy Lab for Pre-Professionals. 1 credit.
This is a lab course that accompanies Human Anatomy for Pre-Professionals, PHA 310, that utilizes web-based histology labs, visits to the gross anatomy lab, demonstrations and models to teach human anatomy as it pertains to healthcare professions. P. BIO 201 or BIO 202 (both preferred); CO: PHA 310.

PHA 312. Professional Development and Experience I. 1.5 credit.
Professional Development and Experience I (PDE I) is the first in a series of four courses to guide students in becoming ethical, reflective, and responsible practitioners in the Ignatian Tradition. In PDE I, students are introduced to professionalism, reflection, self-awareness, self-regulation, and health literacy. Core Ignatian Values are introduced and thoughtful reflection is utilized to increase student self-awareness as the basic foundation for becoming a reflective practitioner. Students will have opportunities for professional growth and development through co-curricular activities. The experiential component introduces students to the pharmacist's role and responsibilities through shadowing and observing pharmacists in community, hospital, and various specialty practice settings.

PHA 313. Calculations in Pharmacy Practice. 2 credits.
This course prepares students to perform calculations as they pertain to the chemical and physical properties of drug substances and pharmaceutical ingredients, prescription preparation, sterile and non-sterile extemporaneous compounding, drug administration, and drug dosing and dosage adjustments based on patient-specific parameters.

PHA 314. Professional Development and Experience II. 1.5 credit.
Professional Development and Experience II (PDE II) is the second in a series of four courses to guide students in becoming an ethical, reflective, and responsible practitioner in the Ignatian Tradition. In PDE II, students are introduced to leadership, innovation, team work, and professional advocacy. Additionally, elements of self-awareness and cultural competency will continue to be developed. Core Ignatian Values are integrated and thoughtful reflection is utilized to increase student self-awareness as the basic foundation for becoming a reflective practitioner. Students will have opportunities for professional growth and development through co-curricular activities. The experiential component introduces students to the pharmacist's role and responsibilities through shadowing and observing pharmacists in community, hospital, and various specialty practice settings. P. PHA 312.

PHA 317. Pharmaceutics I: Physiochemical Principles of Drugs. 3 credits.
This course provides foundation to understand and apply physicochemical concepts to current drug entities as well as future therapeutic agents to obtain better therapeutic outcomes. The concept of solubility and partitioning will be discussed in terms of drug release and its bioavailability. The principles of pharmaceutical sciences involved in drug design and dosage form properties, formulation development and delivery, drug stability and storage, and drug kinetics (absorption, distribution, and excretion) will be introduced.

PHA 320. Communication Skills. 0-2 credits.
The course establishes a framework and demonstrates concepts that are essential for effective communication in pharmacy settings. Emphasis is placed on developing effective, empathic, and assertive communication between pharmacists, patients and interdisciplinary colleagues. Active learning techniques provide an opportunity for practice and feedback.

PHA 321. Health Systems and Patient Safety. 3 credits.
This course examines various structural, economic, service delivery, professional, and patient factors that influence contemporary pharmacy practice in a variety of settings. This course emphasizes development of a culture of best practices in patient safety. This course includes concepts of safe patient care systems in health care delivery as well as public health principles and practices in the context of public responsibility.

PHA 326. Patient Assessment. 2 credits.
This course instructs the student how to methodically obtain and evaluate subjective and objective patient information for all of the body systems. Students learn specific patient interviewing skills and questions in order to appropriately obtain subjective information. Students also learn theoretical and practical aspects of objective patient information including physical examination and clinical laboratory data. Patient case scenarios are utilized to assist students in comparing and contrasting normal from abnormal physiologic functioning and to expose them to patient assessment skills that are commonly used to provide pharmaceutical care. P. MIC 541, OTD 215, PHA 320 and PHA 404.

PHA 333. Introductory Pharmacy Practice Experience II. 3 credits.
Introductory Pharmacy Practice Experience (IPPE) 2 will provide second-year pharmacy students with a 120 hour (three-week block) experience in a community pharmacy practice setting. Students will actively participate in community pharmacy practice activities such as prescription processing, medication dispensing, communicating with patients and healthcare professionals, as well as working with inventory control procedures. Students will reflect upon the experience during a 1 hour group reflection session led by a pharmacist faculty member after the experience. IPPE 2 will prepare students for future pharmacy practice experiences. P. PHA 314.

PHA 335. Directed Study in Spanish for Healthcare Professionals. 1 credit. FA, SP, SU
In this course students in the School of Pharmacy and Health Professions will complete an online certificate program for Spanish within their health profession. The certificate content will offer an introduction to Spanish vocabulary, grammar, and important cultural information within the overriding context of the health professions yet focusing on material specific to the student's profession (occupational therapy, pharmacy, or physical therapy).

PHA 337. The Chemical Basis of Drug Action I. 2.5 credits.
The Chemical Basis of Drug Action emphasizes the relevance of chemistry to contemporary pharmacy practice. The course integrates chemical, biochemical and physiological principles to derive structure-activity relationships for commonly encountered drugs that explain the scientific rationale for their therapeutic use. Active learning strategies are utilized to help learners develop the skills necessary to provide a scientific basis for patient-centered therapeutic decision-making. P. PHA 301; CO: PHR 241.

PHA 338. Professional Development Seminar III. 1 credit.
Professional Development Seminar III (PDS III) is the third in a series of four courses to guide students in becoming an ethical, reflective, and responsible practitioner in the Ignatian Tradition. In this course students will continue to develop their self-awareness and leadership skills to enhance innovation and team communication as a key component of developing professional behaviors and attitudes. They will also broaden their knowledge and practice of patient advocacy through classroom and co-curricular activities.

PHA 339. Pharmaceutics II - Pharmaceutical Dosage Forms and Drug Delivery Systems. 3 credits.
This course provides an introduction to pharmaceutical dosage forms and drug delivery systems i.e. solid, liquid, semi-solid, aerosol, transdermal, and emerging novel delivery systems. This course will emphasize on development of nanoparticles, biomolecules, application of polymers/ excipients and their calculations and biopharmaceutical aspects. The course will highlight the applications of non-sterile compounding of dosage forms and have a lab component to simulate the theoretical learning with actual compounding practice. P. PHA 317; P or CO: PHA 313.

PHA 340. Native American Culture and Health. 2 credits. (Pharmacy Elective Course)
This course allows students to learn firsthand about the culture and health care practices of Native Americans by participating in seminars offered by Native tribal and spiritual leaders, healers, and others who work with Native populations in promoting wellness and pride in culture. Students will participate in the course with other SPAHP students enrolling in the elective course PHA 341. P. IC.

PHA 341. Learning Through Reflective Service: Native American Experience. 2 credits. (Pharmacy Course Elective)
This course allows students to learn firsthand about the culture and health care practices of Native Americans through focused, reflective study and professional and community-related service activities. One week of guided on-site experience at a Native American reservation or urban community is preceded by the establishment of learning goals, readings, independent study, group discussion and reflection. Following the service week, students engage in further reflection to make meaning of the experience, present an oral reflection on the lessons learned from the experience and a seminar on their experience to interested Creighton students and faculty, and explore career opportunities in the Public Health Service. P. IC.

PHA 343. Intensive English Language for Health Care Professionals. 1 credit.
The purpose of this course is to prepare entry-level Doctor of Occupational Therapy, Pharmacy and Physical Therapy students, who identify as English as a Second Language learners, with the English language strategies and skills as well as the cultural understanding that they will need to be successful in their respective program. This course is open to first-year students enrolled in the School of Pharmacy and Health Professions.

PHA 345. Considerations in Leadership and Personal Growth. 2 credits.
Learners will gain an understanding of the theoretical and practical aspects of leadership necessary for success in both their personal and professional lives. They will review and discuss various theories and approaches to leadership and personal and professional growth in a variety of scenarios, learning how understanding oneself as an individual is important in understanding oneself as a leader.

PHA 347. Professional Seminar. 1 credit. (Pharmacy Elective Course)
This 1-credit course is designed to assist students in becoming strategic learners. The course will explore strategies or approaches that enable one to better learn, understand and retain what is being taught, and the ways to manage one's time and life in the new environment of professional school. Ideas from educational psychology, cognitive psychology, and various academic disciplines are presented in order to improve students' learning ability in professional school.

PHA 348. Well-Being and Student Success Seminar. 1 credit. (Pharmacy Elective Course)
This course is designed to assist students in developing an awareness of the impact of well-being on their success as students and future healthcare professionals. The course will explore the following aspects of well-being: academic, social, financial, physical, community, and spiritual. These aspects of well-being will be used to assist students in creating a personal, academic, and professional plan for success. This course is open to second and third-year students enrolled in the School of Pharmacy and Health Professions.

PHA 350. Introduction to Research Methods and Biostatistics. 2 credits.
Students will identify and interpret research questions, hypotheses, variables, sampling methods, research designs, as well as, descriptive and inferential statistics. The emphasis is to evaluate and assess the validity and significance of these research components so there is appropriate interpretations of research results. The goal is for students to become critical readers and users of research so they can practice evidence-based pharmacy and contribute to pharmacy's knowledge base. Students will learn to interpret the validity and the statistics of a research report, but will not necessarily learn to conduct research or perform statistical calculations.

PHA 351. Foundations of Public Health. 2 credits.
This course introduces principles and practice of public health, from population and patient care perspectives. Key epidemiologic and public health terminology is covered. Pharmacy applications of core functions and essential services of public health, as well as Healthy People Objectives and Global Goals for Sustainable Development, are addressed. Partnership opportunities in collective efforts to optimize public health are explored. P. PHA 321.

PHA 359. Dispensing and Patient Care I. 0-2 credits.
Dispensing and Patient Care I covers a wide range of topics related to pharmacy practice. These include an introduction to drug information resources, sterile compounding, prescription processing and dispensing, patient encounters and counseling, communication, patient safety, and other pharmacy practice related issues. Students are prepared to apply knowledge and skills in both community and institutional settings with a focus on patient care.

PHA 362. Ocular Pharmacology and Therapeutics. 1 credit. (Pharmacy Elective Course)
This course will provide an overview of basic concepts of physiology, biochemistry and anatomy of the eye to facilitate an understanding of the etiology and pharmacological management of various ocular diseases. The following ophthalmic disorders will be covered: glaucoma, Dry Eye Syndrome, cataract, diabetic retinopathy and age-related macular degeneration. This course is open to P1 through P3 students in both the campus and distance pathways.

PHA 363. Introduction to Pharmaceutical Materials Sciences. 1 credit. (Pharmacy Elective Course)
This course provides an introduction to the excipients or inactive ingredients involved in pharmaceutical preparations. The physicochemical, toxicologic, and regulatory properties of common excipients will be discussed. In addition, the functional roles of common pharmaceutical excipients will be discussed. P. PHA 317 and PHA 339.

PHA 365. Intro to Specialty Pharmacy. 1 credit. FA
This course will provide an overview of basic concepts of specialty pharmacy to promote an understanding of operations, clinical management, patient outcomes, and product fulfillment within specialty pharmacy. Specialty disease state topics include HIV and hepatitis C. P. Successful completion of all year one Pharmacy courses.

PHA 366. History of Pharmacy in America. 1 credit. SP
This course introduces students to the history and development of the Profession of Pharmacy in America. Students will explore the growth of professionalism and professional organizations, commercial and industrial growth, development of education, governance of pharmacy, and the pharmacist's professional image portrayed in media. Topics will foster student interest in the history of pharmacy and appreciation of the impact visionary leaders have made on the development of the profession. The course will include an introduction to pharmacy artifacts and the integral role they played in the development of pharmacy in America.

PHA 367. Medical Affairs Competency Certificate for Pharmacy Students. 1 credit. FA, SP
The role of pharmacy-trained graduates in the pharmaceutical industry has grown over the years, particularly in the functional area of medical affairs. Pharmacy education focuses primarily on training graduates to provide direct patient care with less information on non-traditional career paths such as the pharmaceutical industry. This course will give those students interested in Medical Affairs the opportunity to explore this popular functional area while earning a certificate valued by industry stakeholders. This is a self-paced, online course. The student must complete the work in the semester in which they are enrolled. P. Student must have P3 status.

PHA 375. Introduction to Online Information Retrieval. 1 credit. (Pharmacy Elective Course)
An in-depth introduction to information retrieval from the major bibliographic health science databases including Medline, Embase, and IPA. The student will develop a proficiency with the mechanics of searching, learn strategies for solving a variety of search problems, and develop an understanding of the strengths and weaknesses of the various databases.

PHA 377. Addiction, Alcoholism and Other Substance Abuse Disorders. 2 credits. (Pharmacy Elective Course)
A study of alcoholism and other substance-related disorders, including etiology, addiction, prevention, and treatments. Special emphasis is given to the disease concept of these disorders, intervention techniques, 12-step programs, dysfunctional families, codependence, adult children, policies relating to impaired professionals, and the impact of alcohol and drug use on society.

PHA 381. Health Informatics. 2 credits. (Pharmacy Elective Course)
This course is designed to provide students with an overview of health technologies currently being used in health care practice, with a focus on their use and impact on care delivery. This includes improvements in safety, quality, and efficiency of care, as well as, negative consequences resulting from increased complexity of health care. This course also presents a national look at the focus on health information technologies and addresses future informatics needs in health care.

PHA 388. Integrative Medicine. 2 credits. (Pharmacy Elective Course)
Evidence-based principles will be used to explore the integration of complementary and alternative medicine (CAM) and pharmacy practice. Ethical considerations relative to CAM therapies will be discussed. Nutraceutical products utilized in the care of selected patient populations will be investigated. Students will be given the opportunity to participate in making a lifestyle change using some of the techniques and activities associated with course topics and activities.

PHA 393. APhA Institute on Substance Use Disorders. 2 credits.
This course is open only to students who attend the APhA Institute on SUDs. The Institute addresses the causes of addiction as it relates to alcoholism and illicit drugs including prevention and treatment strategies. Special emphasis is given to the disease concept of these disorders, morbidity and mortality, 12-step programs, and the impact of alcohol and illicit drug use on society. Students will learn how to provide appropriate assistance and support to patients affected by substance use disorders. Prerequisite: Enrollment in the American Pharmacists Association Institute on Substance Use Disorders and instructor approval.

PHA 397. Directed Study. 0-6 credits. (Elective)
An opportunity for motivated students to become involved in a research project or topic study under the direction and guidance of a faculty member. This study may be in any area of pharmacy practice. A maximum of six semester hours may be taken. Graded Satisfactory/Unsatisfactory. P. IC.

PHA 399. Directed Independent Research I. 1-6 credits. (Elective)
This course provides students with the opportunity to become involved in a research project under the guidance of a faculty member. The course is repeatable to a maximum of six hours.

PHA 402. Pharmacy Didactic Course Remediation. 0 credits.
Didactic course remediation is a process agreed upon between the instructor of record (IOR) and the student that allows the student the opportunity to revisit key course concepts and then to demonstrate competency. Remediation is only available for required didactic courses. Please check the syllabus to see if remediation is offered for an individual course. For certain courses, remediation will be in the form of retaking the course over the summer at a different institution. The grade at Creighton will then be replaced, but the cost of the course will be the student's responsibility. P. Failure of a required didactic course and approval from the Progression Committee (in conjunction with the IOR and Academic Success). All skills-based courses (Dispensing and Patient Care courses, IPPEs, APPEs, Immunizations and Pharmacotherapeutics Case Study course) are excluded from remediation. Students will not be allowed to remediate a course if failure of the remediation course will result in a probationary event and dismissal of the program.

PHA 403. Cultural Proficiency for Health Care Professionals I. 2 credits. (Elective)
This course addresses the need for cultural proficiency for health care professionals. The course provides the students an opportunity to explore the cultural factors that influences their own interaction with the health care system in the United States and with health care providers. The course also addresses how a patient's cultural beliefs, values, practices, religion and language affect the relationship with healthcare providers. Further, this course will provide several activities on how to utilize this knowledge to develop awareness and respect for other cultures in order to implement a culturally proficient care plan. P. IPE 500.

PHA 404. Human Physiology. 3 credits.
This course is designed to provide pharmacy students with a basic knowledge of human physiology. The function of the major organ systems is covered in a series of lectures and discussions. This course is required for PH1 students both on campus and online.

PHA 410. Third World Cultures and Health Care (ILAC Service). 3 credits. (Elective)
This service course allows students to learn about the culture and health care practices of a third world country through professional and community-related service activities. The 5-6 week summer service experience during the months of June and July in the Institute for Latin American Concern (ILAC) Summer Program has a major focus on the team approach to episodic health-care problems. This unique experience affords the student the opportunity to participate in the inter-disciplinary assessment, planning, implementation and evaluation of health care delivery and education in a Third World country, under the direction of faculty. Students present an oral reflection on the lessons learned from the experience and a seminar on their experience to interested Creighton students and faculty. The student has to apply and be accepted to the ILAC Summer Program. There are informational meetings about the ILAC Summer Program each year during the fall semester (September/ October). Interested students must submit an application to the ILAC Omaha Office by November 1st for the following summer program. An interview is scheduled and accepted participants are notified electronically before Thanksgiving break. Pharmacy students will be competing for the 18-24 'ayudante' (helper) positions with students from other colleges, universities, and professionals. P. OTD 330 or equivalent Application and acceptance to ILAC Summer Program.

PHA 413. Pharmacotherapeutics I: Focus on Nonprescription Products & Self-Care. 5 credits.
This course provides instruction on the pharmacotherapeutic management of medical disorders that can primarily be treated utilizing nonprescription medications and nutraceutical products. The students will be taught how to assess a patient's current health status to determine if they are a candidate for self-care. Foundational concepts of pathophysiology relative to nonprescription products are also presented. Students are expected to assess patients, make therapeutic recommendations and provide the appropriate counseling information to ensure safe and effective use of the recommended products. P. MIC 541, PHA 339, PHA 404 and PHA 443.

PHA 414. Pharmacotherapeutics II. 6 credits.
This course provides in-depth instruction into the pharmacotherapeutic management of major medical diseases with the incorporation of pathophysiologic, pharmacologic and pharmacokinetic principles in a comprehensive medication therapy management model. Emphasis is placed on the efficacy, safety, and cost-effectiveness of drug therapy in pathological disease states affecting all major human organ systems. This course provides the foundation of skills the pharmacist needs to provide appropriate pharmaceutical care to patients. The inclusion of case studies in this course allows the student pharmacist to integrate and apply the didactic knowledge in preparation for the experiential portion of the curriculum. P. PHR 241; PHA 326; PHA 337; PHA 413; PHA 443.

PHA 415. Pharmacotherapeutics III. 6 credits.
This continuation of Pharmacotherapeutics II continues to provide in-depth instruction into the pharmacotherapeutic management of major medical diseases with the incorporation of pathophysiologic, pharmacologic and pharmacokinetic principles in a comprehensive medication therapy management model. Emphasis is placed on the efficacy, safety, and cost effectiveness of drug therapy in pathological disease states affecting all major human organ systems. This course provides the foundation of skills the pharmacist needs to provide appropriate pharmaceutical care to patients. The inclusion of case studies in this course allows the student pharmacist to integrate and apply the didactic knowledge in preparation for the experiential portion of the curriculum. P. PHR 242, PHA 447, and PHA 414.

PHA 416. Pharmacotherapeutics IV. 6 credits.
This continuation of Pharmacotherapeutics III continues to provide in-depth instruction into the pharmacotherapeutic management of major medical diseases with the incorporation of pathophysiologic, pharmacologic and pharmacokinetic principles in a comprehensive Pharmacist's Patient Care Process. Emphasis is placed on the efficacy, safety, and cost effectiveness of drug therapy in pathological disease states affecting all major human organ systems. This course provides the foundation of skills the pharmacist needs to provide appropriate pharmaceutical care to patients. The inclusion of cases in this course allows the student pharmacist to integrate and apply the didactic knowledge in preparation for the experiential portion of the curriculum. P. PHR 242, PHA 447, and PHA 415.

PHA 421. Delivering Medication Therapy Management Services. 1 credit.
This required course is an innovative and interactive certificate training program, through the American Pharmacists Association (APhA), that explores the pharmacist's role in providing Medication Therapy Management (MTM) services to patients. The purpose of this certificate training program is to prepare student pharmacists to improve medication use through the delivery of MTM services. P. PHA 415.

PHA 424. Pharmacotherapeutics II Case Studies. 1 credit.
This course provides practical application of the pharmacotherapeutic management of major medical diseases with the incorporation of pathophysiologic, pharmacologic and pharmacokinetic principles in a comprehensive medication therapy management model. Emphasis is placed on the efficacy, safety, and cost effectiveness of drug therapy in pathological disease states affecting all major human organ systems. This course provides the foundation of skills the pharmacist needs to provide appropriate pharmaceutical care to patients. CO: PHA 414.

PHA 425. Pharmacotherapeutics III Case Studies. 1 credit.
This continuation of Pharmacotherapeutics II case studies course provides practical application of the pharmacotherapeutic management of major medical diseases with the incorporation of pathophysiologic, pharmacologic and pharmacokinetic principles in a comprehensive medication therapy management model. Emphasis is placed on the efficacy, safety, and cost effectiveness of drug therapy in pathological disease states affecting all major human organ systems. This course provides the foundation of skills the pharmacist needs to provide appropriate pharmaceutical care to patients. CO: PHA 415.

PHA 426. Pharmacotherapeutics IV Case Studies. 1 credit.
This continuation of Pharmacotherapeutics III case studies provides practical application of the pharmacotherapeutic management of major medical diseases with the incorporation of pathophysiologic, pharmacologic and pharmacokinetic principles in a comprehensive medication therapy management model. Emphasis is placed on the efficacy, safety, and cost effectiveness of drug therapy in pathological disease states affecting all major human organ systems. This course provides the foundation of skills the pharmacist needs to provide appropriate pharmaceutical care to patients. CO: PHA 416.

PHA 430. Immunopharmacology and Biotechnology. 2 credits.
This is an immunology and biotechnology course designed for pharmacy students. It will emphasize immunology and pharmacology as they relate to the initiation and regulation of immune response. The information will include: the fundamentals of basic and cellular immunology, the physiology, pathology and pharmacology of cytokines, mechanisms of allergic disease, immunologic mechanisms of tissue transplant rejection, immunology of HIV infection and T cell vaccines, pharmacology of immunosuppressive drugs, taxonomy and pharmacology of monoclonal antibodies, and clinical approaches of gene therapy including CAR T cell technology. P. PHR 242.

PHA 433. Introductory Pharmacy Practice Experience III. 3 credits.
Introductory Pharmacy Practice Experience III (IPPE 3) will provide third-year pharmacy students with 120 hours (three-week block or longitudinal) of experience in a hospital pharmacy practice setting. Students will actively participate in hospital pharmacy practice activities such as processing of medication orders, preparing and dispensing of medications, communicating with other healthcare professionals, as well as working with inventory control procedures. Students will also have opportunities for professional growth and development through attending professional meetings, participating in health related service, and reflecting upon their experiences. IPPE 3 will prepare students for future pharmacy practice experiences. Graded Satisfactory/Unsatisfactory. P. PHA 333.

PHA 434. Introductory Pharmacy Practice Experience IV. 1 credit.
Introductory Pharmacy Practice Experience IV (IPPE 4) will provide third-year pharmacy students with 32 hours of experience to further develop clinical skills, including but not limited to the Pharmacist's Patient Care Process and in preparation for Advanced Pharmacy Practice Experiences (APPEs) in their P4 year. Students will actively participate in activities which may include working up patients, presenting patient cases, documenting SOAP notes, conducting medication profile reviews, answering drug information questions, and communicating with other healthcare professionals, while demonstrating appropriate professionalism and communication skills. P. PHA 415, PHA 433.

PHA 440. Postgraduate Training in Pharmacy Practice. 1 credit.
This course offers knowledge about postgraduate training opportunities in pharmacy practice as well as guidance on how to prepare and apply for a pharmacy practice residency. P. PHA 414.

PHA 442. Pharmacy Practice Management. 3 credits.
This course is designed to help students gain an appreciation for the various roles of management in pharmacy practice regardless of future position or practice setting. Management principles that are introduced, developed and demonstrated include operations management, financial analysis, human resource management, marketing, management of traditional pharmacy goods and services, management of value-added pharmacy services, and risk management. Students will be introduced to these concepts and asked to apply them by demonstrating business planning and pharmacy service implementation. P. PHA 321.

PHA 443. Basic Pharmacokinetics. 2 credits.
Pharmacokinetics is the mathematically-based study of drug movement in biological systems. This course provides a fundamental introduction to the basic pharmacokinetic principles of absorption, distribution, metabolism, and excretion. The practical application of these principles informs patient-specific therapeutic decisions. P or CO: PHA 313.

PHA 447. Chemical Basis of Drug Action II. 2.5 credits.
The Chemical Basis of Drug Action emphasizes the relevance of chemistry to contemporary pharmacy practice. The course integrates chemical, biochemical and physiological principles to derive structure-activity relationships for commonly encountered drugs that explain the scientific rationale for their therapeutic use. Active learning strategies are utilized to help learners develop the skills necessary to provide a scientific basis for patient-centered therapeutic decision-making. P. PHA 301, PHR 241, PHA 337; CO: PHR 242.

PHA 448. Professional Development Seminar IV. 1 credit.
Professional Development Seminar IV is the last in a series of four courses to guide students in becoming ethical, reflective, and responsible practitioners in the Ignatian Tradition. In PDS IV, the topics of professionalism, leadership, entrepreneurship and innovation, career development, continuous professional development, and team readiness are emphasized through lecture, discussion, reflection, and other classroom and co-curricular activities.

PHA 451. Advanced Critical Care Elective. 2 credits. (Elective)
The Advanced Critical Care elective course provides in-depth advanced instruction concerning the pharmacotherapeutic management of commonly encountered critical care diseases. Emphasis is placed on the efficacy, safety, and comparative value of drug therapy in this highly specialized practice area. Didactic knowledge of physiology, pharmacology, and drug therapy management is applied to disease states specific to this population. Didactic instruction is combined with practice case studies and interactive discussions concerning critical care pharmacy-related issues. P. PHA 413, PHA 414, and PHA 415.

PHA 452. Pharmacoeconomics. 2 credits. (Elective)
This course will focus on the application of economic principles and trends applied to the pharmaceutical market. The student will be introduced to common economic evaluation methods (e.g., cost-benefit, cost-effectiveness, cost-utility) as applied to pharmaceutical products and services. Quality of life and outcomes research are explored. Other topics to be covered are: decision tree analysis, epidemiology and pharmacoeconomic research, pharmacoeconomic research in clinical trials, pharmacoeconomic research in community pharmacy practice, pharmacoeconomic research in medical centers, and pharmacoeconomics in the management of drug benefit programs (e.g., formulary development) The course will rely on the use of conventional economic analytical tools. Students should also have a basic knowledge of fundamental descriptive and analytical statistics. P. PHA 321; PHA 350.

PHA 454. Pharmacy Practice Law. 3 credits.
This course introduces students to the legal dimensions of pharmacy practice, with emphasis on federal and Nebraska statutes and regulations pertaining to licensure, pharmacy practice, prescription-only and over-the-counter drug products, controlled substances, drug product selection, and other requirements with which a pharmacy practitioner must comply.

PHA 455. Diabetes Care. 2 credits. SP (Elective)
The Pharmacist and Patient-Centered Diabetes Care Certificate Training Program is an elective course to develop knowledge, skills, and confidence needed to provide effective, evidence-based diabetes care. The live portion incorporates case studies and hands-on skills training focused on the situations most likely to be encountered – as well as the services most needed. Participants will gain experience evaluating and adjusting drug therapy regimens for patients with type 1 and type 2 diabetes, counseling patients about lifestyle interventions, analyzing and interpreting self-monitoring of blood glucose results, and assessing the overall health status of patients to identify needed monitoring and interventions. Upon successful completion of all course requirements the student will receive a certificate from APhA indicating completion of "The Pharmacist & Patient-Centered Diabetes Care. A National Certificate Program." P. PHA 414 and third year status.

PHA 456. Ethics in the Health Care Professions. 3 credits.
This course prepares students to approach ethical decision-making rigorously with a thorough understanding of professional moral responsibility. It assists students to: distinguish ethical from other kinds of issues in pharmacy; identify the morally relevant features of a case; identify the moral options open to a pharmacist faced with a moral problem; provide justification for the best options; consider counter arguments for one's position; practice the act of responding personally to an ethical problem in clinical practice through group interactions; and enhanced commitment to promoting the dignity of others.

PHA 457. Clinical Toxicology. 1 credit. (Elective)
This course will introduce students to the clinical toxicology of commonly encountered poisons. The course will utilize case studies and standardized approach to introduce general guidelines for the prevention and treatment of each poisoning. P. PHA 337 and PHR 241.

PHA 458. Literature Evaluation and Evidence-Based Practice. 3 credits.
This course prepares pharmacy students to practice evidence-based therapeutic decision-making in order to positively impact patient care. To meet this objective, the course integrates principles of evidence based medicine, students' prior knowledge of biostatistics and therapeutics, and advanced use of drug information resources. Emphasis is placed on the critical evaluation of medical literature and synthesis of information to form evidence-based therapeutic recommendations. Additionally, students will practice scientific communication orally and in written form in order to effectively communicate these recommendations. P. PHA 350 and PHA 414.

PHA 468. NAPLEX Prep Course. 0.5,1 credits. FA, SP, SU
This course is designed to help pharmacy students start to prepare for NAPLEX in their 4th year. The course will require students to review topics such as foundational knowledge (including pharmaceutics, pharmacokinetics, retrieval and interpretation of literature), medication use process (including interpretation of prescriptions, appropriateness of therapy, therapeutic monitoring, Top 200 drug information), person-centered assessment and treatment (including health histories, signs and symptoms, patient education, lifestyle modifications), pharmacy management and leadership (including pharmacy operations, medication safety, regulations and regulatory bodies) and professional practice (including adverse drug reporting, social determinants and drivers of health, public health initiatives). Completion of program requirements, such as the Graduate Exit Survey, will also be added as requirements in this course. P. Completion of all didactic coursework and concurrently completing APPEs.

PHA 469. Dispensing and Patient Care II. 0-2 credits.
Dispensing and Patient Care II (DPC II) is designed to reinforce concepts presented in course lectures, and to support the development and application of skills required to practice contemporary pharmacy. Specific pharmacy practice skills will be introduced and reinforced through lectures, simulated pharmacy practice cases, and simulated patient encounters. P. PHA 326, PHA 359, and PHA 413.

PHA 470. Pharmacy-Based Immunization Delivery. 1 credit.
This required course enables students to become certified in pharmacy based immunization delivery. It is designed to teach pharmacy students (or practicing pharmacists) about vaccine-preventable diseases, about the many different vaccines available, and about optimal pharmaceutical care (including administering vaccines) for patients relative to immunizations. The course prepares students to provide a needed service to the community while obtaining clinical experience in a prevention oriented pharmaceutical care activity. P or CO: MIC 541, PHA 359.

PHA 480. Pediatric Pharmacy Practice Elective. 2 credits. (Elective)
This two-hour course provides in-depth instruction into the pharmacotherapeutic management of the major pediatric diseases. Emphasis is placed on the efficacy, safety, and comparative value of pediatric drug therapy. Didactic knowledge of physiology, pharmacology,and drug therapy management is applied to disease states specific to this population. Didactic instruction is combined with interactive discussions and exposure to pediatric pharmacy. P. PHA 414.

PHA 481. Oncology Pharmacy Practice Elective. 1 credit. (Elective)
This one-hour course provides instruction into the pharmacotherapeutic management of major oncology diseases and the provision of supportive care to oncology patients. Emphasis is placed on the efficacy, safety, and comparative value of oncology drug therapy, as well as issues surrounding the care of a cancer patient. Didactic knowledge of physiology, pharmacology, and drug therapy management is applied to disease states specific to this population. Didactic instruction is combined with interactive discussions and exposure to oncology pharmacy. P. PHR 241 and PHR 242.

PHA 484. Compounding Seminar and Practicum. 1 credit. (Elective)
This is a compounding immersion course offered off campus for students who want practical and hands-on knowledge and training in modern innovative non-sterile compounding. P. PHA 313, IC, and permission of student advisor.

PHA 489. Dispensing and Patient Care III. 0-2 credits.
Dispensing and Patient Care III (DPC III) is designed to reinforce concepts presented in course lectures, and to support the development and application of skills required to practice contemporary pharmacy. Specific pharmacy practice skills will be introduced and reinforced through lectures, simulated pharmacy practice cases, and simulated patient encounters. P. PHA 415 and PHA 469.

PHA 494. Advanced Pharmaceutical Compounding Seminar and Practicum. 2 credits. (Elective)
This is an advanced compounding course for students who have taken and passed the introductory compounding course and would like further instruction in advanced methods and techniques of pharmaceutical compounding. P. PHA 484 and PHA 313; IC.

PHA 495. Advanced Veterinary Compounding Seminar & Practicum. 3 credits. (Elective)
This is an advanced compounding course for students who have taken and passed the introductory compounding course and would like instruction in comprehensive veterinary pharmacotheraphy and applications to compounding for veterinary patients. P. PHA 484; PHA 313; Instruction Consent.

PHA 499. Directed Independent Research II. 1-6 credits. (Elective)
This course provides students with the opportunity to become involved in a research project under the guidance of a faculty member. The course is repeatable to a maximum of six hours.

PHA 510. Community Advanced Pharmacy Practice Experience. 5 credits.
The Community Advanced Pharmacy Practice Experience (APPE) is a rotation in an approved community pharmacy which emphasizes not only medication dispensing and control, but also communicating with patients, prescribers, and other health care professionals. This course is repeatable to a maximum of 10 credit hours. P. Successful completion of all didactic coursework in the Pharm.D. curriculum.

PHA 511. Hospital Advanced Pharmacy Practice Experience. 5 credits.
The Hospital Advanced Pharmacy Practice Experience (APPE) is an inpatient hospital rotation in an approved hospital/health system pharmacy designed to ensure student pharmacist preparedness for entry-level practice. This APPE allows the student to practice and enhance Pharmacist's Patient Care Process (PPCP) skills as they apply to direct patient care within the acute hospital (inpatient) setting. Emphasis is placed on students becoming active members of the healthcare team as they review medication orders, monitor patient medication therapy, identify, resolve, and prevent medication-related problems, as well as effectively communicate with other healthcare professionals. The primary skills developed in this rotation include patient and medication assessment, preparation, and monitoring, problem-solving and critical thinking, and written/verbal communication.

PHA 512. Acute Care Advanced Pharmacy Practice Experience. 5 credits.
The Acute Care Advanced Pharmacy Practice Experience (APPE) is a clinical rotation providing students an opportunity to provide medication therapy management and pharmaceutical care to adult patients in an inpatient acute care environment. This course is repeatable to a maximum of 10 credit hours. P. Successful completion of all didactic coursework in the Pharm.D. curriculum.

PHA 515. Drug Information Advanced Pharmacy Practice Experience. 5 credits.
The Drug Information Advanced Pharmacy Practice Experience (APPE) allows the student to provide drug information services to pharmacists and other healthcare professionals. Emphasis is placed on how to receive requests, collect background information, conduct a systematic search, and provide an evidence-based recommendation based on a critical analysis of medical literature. The student will develop a working knowledge of relevant practice resources as well as develop the ability to critically evaluate such resources. The student may also have the opportunity to become involved with the evaluation of drugs for formulary inclusion, quality assurance/drug usage evaluation activities, news publications, scholarly activities, and Pharmacy and Therapeutics Committee Support. This course is repeatable to a maximum of 10 credit hours. P. Successful completion of all didactic coursework in the Pharm.D. curriculum.

PHA 516. Ambulatory Care Advanced Pharmacy Practice Experience. 5 credits.
The Ambulatory Care Advanced Pharmacy Practice Experience (APPE) is a clinical rotation during which the student provides medication therapy management and pharmaceutical care in an ambulatory (outpatient) clinic setting. Emphasis is placed on how to appropriately identify, resolve, and prevent drug-related problems, as well as effectively communicates with patients and health care professionals. The skills developed in this rotation include patient counseling and education on drug information, written and verbal communication skills, assessment and documentation of services and therapy, and an appreciation for the pharmacist's role in the promotion of rational drug therapy. This course is repeatable to a maximum of 10 credit hours. P. Successful completion of all didactic coursework in the Pharm.D. curriculum.

PHA 520. Elective Community Advanced Pharmacy Practice Experience. 5 credits. (Elective)
The Community Advanced Pharmacy Practice Experience (APPE) is a rotation in an approved community pharmacy which emphasizes not only medication dispensing and control, but also communicating with patients, prescribers, and other health care professionals. This course is repeatable to a maximum of 10 credit hours. P. Successful completion of all didactic coursework in the Pharm.D. curriculum.

PHA 521. Community Management Advanced Pharmacy Practice Experience. 5 credits. (Elective)
The Community Management Advanced Pharmacy Practice Experience (APPE) is an elective rotation which provides experience in a community/retail pharmacy setting where students learn the various aspects involved with managing a pharmacy. The primary focus is financial analysis including third-party issues, inventory control, and personnel management as well as the processing of new and refill prescriptions. This course is repeatable to a maximum of 10 credit hours. P. Successful completion of all didactic coursework in the Pharm.D. curriculum.

PHA 522. Advanced Community Advanced Pharmacy Practice Experience. 5 credits. (Elective)
This Advanced Community Advanced Pharmacy Practice Experience (APPE) is an elective clinical rotation which allows students to enhance their ability to provide medication therapy management to patients in a community/retail pharmacy setting. Pharmacotherapeutic knowledge and clinical skills are integrated with routine medication dispensing activities. The primary focus is patient assessment, counseling and education, medication therapy and disease state management, and documentation of patient information and interventions. This course is repeatable to a maximum of 10 credit hours. P. Successful completion of all didactic coursework in the Pharm.D. curriculum.

PHA 523. Long Term Care Advanced Pharmacy Practice Experience. 5 credits. (Elective)
The Long Term Care Advanced Pharmacy Practice Experience (APPE) is an elective clinical rotation where the student gains skills and competence in the distribution of medication, provision of medication therapy management, and consulting services to the residents of nursing facilities, subacute care and assisted living facilities, psychiatric hospitals, hospice, and home- and community-based care. This course is repeatable to a maximum of 10 credit hours. P. Successful completion of all didactic coursework in the Pharm.D. curriculum.

PHA 524. Elective Ambulatory Care Advanced Pharmacy Practice Experience. 5 credits. (Elective)
The Ambulatory Care Advanced Pharmacy Practice Experience (APPE) is a clinical rotation during which the student provides medication therapy management and pharmaceutical care in an ambulatory (outpatient) clinic setting. Emphasis is placed on how to appropriately identify, resolve, and prevent drug-related problems, as well as effectively communicates with patients and health care professionals. The skills developed in this rotation include patient counseling and education on drug information, written and verbal communication skills, assessment and documentation of services and therapy, and an appreciation for the pharmacist's role in the promotion of rational drug therapy. This course is repeatable to a maximum of 10 credit hours. P. Successful completion of all didactic coursework in the Pharm.D. curriculum.

PHA 525. Informatics Advanced Pharmacy Practice Experience. 5 credits. (Elective)
The Informatics Advanced Pharmacy Practice Experience (APPE) is an elective rotation which focuses on fundamentals of pharmacy informatics such as pharmacy automation technology and information systems in a hospital setting. This rotation is beneficial to students who are interested in hospital pharmacy practice or those interested in specializing in pharmacy informatics. This course is repeatable to a maximum of 10 credit hours. P. Successful completion of all didactic coursework in the Pharm.D. curriculum.

PHA 526. Home Infusion Advanced Pharmacy Practice Experience. 5 credits. (Elective)
The Home Infusion Advanced Pharmacy Practice Experience (APPE) is an elective clinical rotation which takes place in a setting that provides home health care services. The student will become familiar with the pharmacist's responsibilities in preparation of home parenteral products. The student may participate in several of the home care facility's activities including home visit assessments with the nurses, inventory and quality control of products and patient discharge consultations. The student will also be exposed to pumps and other parenteral devices needed in home care. This course is repeatable to a maximum of 10 credit hours. P. Successful completion of all didactic coursework in the Pharm.D. curriculum.

PHA 527. Compounding Advanced Pharmacy Practice Experience. 5 credits. (Elective)
The Compounding Advanced Pharmacy Practice Experience (APPE) is an elective rotation in a community pharmacy that specializes in the compounding of extemporaneous drug products. The student will not only gain experience in preparing and compounding patient-specific dosage forms but will also learn how to provide medication therapy management for patients needing compounded medications. This course is repeatable to a maximum of 10 credit hours. P. Successful completion of all didactic coursework in the Pharm.D. curriculum.

PHA 528. Institute For Latin American Concerns (ILAC) Advanced Pharmacy Practice Experience. 5 credits. (Elective)
The ILAC Advanced Pharmacy Practice Experience (APPE) is a five-week clinical elective rotation in the study and practice of inter-disciplinary assessment, planning, implementation, and evaluation of health-care delivery in the ILAC Summer Program. Major focus is on the team approach to episodic health-care problems. This unique experience affords the student the opportunity to actively participate in the triage of health-care problems, health assessment, collaboration and diagnosis, explanation of treatment, and education in a Third World country (Dominican Republic) under the direction of faculty and pharmacy professionals. The ILAC Advanced Pharmacy Practice Experience (APPE) is a five-week clinical elective rotation in the study and practice of inter-disciplinary assessment, planning, implementation, and evaluation of health-care delivery in the ILAC Summer Program. Major focus is on the team approach to episodic health-care problems. This unique experience affords the student the opportunity to actively participate in the triage of health-care problems, health assessment, collaboration and diagnosis, explanation of treatment, and education in a Third World country (Dominican Republic) under the direction of faculty and pharmacy professionals. P. Successful completion of all didactic coursework in the Pharm.D. curriculum. P. Successful completion of all didactic coursework in the Pharm.D. curriculum.

PHA 529. International Advanced Pharmacy Practice Experience. 5 credits. (Elective)
The ILAC Advanced Pharmacy Practice Experience (APPE) is a five-week clinical elective rotation in the study and practice of inter-disciplinary assessment, planning, implementation, and evaluation of health-care delivery in the ILAC Summer Program. Major focus is on the team approach to episodic health-care problems. This unique experience affords the student the opportunity to actively participate in the triage of health-care problems, health assessment, collaboration and diagnosis, explanation of treatment, and education in a Third World country (Dominican Republic) under the direction of faculty and pharmacy professionals. This course is repeatable to a maximum of 10 credit hours. P. Successful completion of all didactic coursework in the Pharm.D. curriculum.

PHA 530. Emergency Medicine Advanced Pharmacy Practice Experience. 5 credits. (Elective)
The Emergency Medicine Advanced Pharmacy Practice Experience (APPE) is an elective clinical rotation which focuses on stabilization of emergent and critical medical conditions encountered in the Emergency Department (ED). The student will develop the ability to quickly and correctly determine the relevant history and physical status with selective use of ancillary services and specialties to achieve the most efficient and effective emergency assessment and management. This course is repeatable to a maximum of 10 credit hours. P. Successful completion of all didactic courses of Pharm.D.

PHA 531. Medication Safety Advanced Pharmacy Practice Experience. 5 credits. (Elective)
The Medication Safety Advanced Pharmacy Practice Experience (APPE) is an elective rotation that will help students become familiar with the key principles utilized in hospitals and health systems to improve medication safety. The rotation is designed to expose students to medication safety nomenclature, key principles, tools, and available resources. The student will participate in several activities designed to improve the student's working knowledge and experience with medication safety concepts. The rotation will enable the student to apply knowledge in any pharmacy practice setting to improve medication safety for patients. This course is repeatable to a maximum of 10 credit hours. P. Successful completion of all didactic courses of Pharm.D.

PHA 533. Organization Management Advanced Pharmacy Practice Experience. 5 credits. (Elective)
This Organization Management Advanced Pharmacy Practice Experience (APPE) is an elective pharmacy rotation that provides experience in national or local pharmacy association activities and operations, inter-organizational affairs, government affairs, health and education policy, institutional research, and related programmatic fields. This course is repeatable to a maximum of 10 credit hours. P. Successful completion of all didactic coursework in the Pharm.D. curriculum.

PHA 534. Medication Therapy Management (MTM) Advanced Pharmacy Practice Experience. 5 credits. (Selective)
The Medication Therapy Management Advanced Pharmacy Practice Experience (APPE) is an elective clinical rotation in which the student gains competency in identifying, preventing, and resolving medication related problems, and effectively communicating with patients and health care providers to optimize therapeutic outcomes. Skills developed in this rotation include: comprehensive medication review, patient education, written and verbal communication skills, and assessment and documentation of services and therapy. P. Successful completion of all didactic courses of Pharm.D.

PHA 535. Academic Advanced Pharmacy Practice Experience. 5 credits. (Elective)
The Academic Advanced Pharmacy Practice Experience (APPE) is an elective pharmacy rotation which exposes students to the design and delivery of content to learners in a variety of settings, examines the diversity of learning strategies, and introduces students to the expectations for teaching, scholarship and service activities of faculty members. This course is repeatable to a maximum of 10 credit hours. P. Successful completion of all didactic coursework in the Pharm.D. curriculum.

PHA 538. Managed Care Advanced Pharmacy Practice Experience. 5 credits. (Elective)
The Managed Care Advanced Pharmacy Practice Experience (APPE) is an elective rotation where the student will gain experiential training in the application of managed care pharmacy principles within the contemporary health care system. This rotation may take place at health insurance and pharmacy benefits management (PBM) organizations as well as other sites that provide formulary management and evaluation. This course is repeatable to a maximum of 10 credit hours. P. Successful completion of all didactic coursework in the Pharm.D. curriculum.

PHA 540. Elective Hospital Advanced Pharmacy Practice Experience. 5 credits. (Elective)
The Elective Hospital Advanced Pharmacy Practice Experience (APPE) is an inpatient hospital rotation in an approved hospital/health system pharmacy designed to ensure student pharmacist preparedness for entry-level practice. This APPE allows the student to practice and enhance Pharmacist's Patient Care Process (PPCP) skills as they apply to direct patient care within the acute hospital (inpatient) setting. Emphasis is placed on students becoming active members of the healthcare team as they review medication orders, monitor patient medication therapy, identify, resolve, and prevent medication-related problems, as well as effectively communicate with other healthcare professionals. The primary skills developed in this rotation include patient and medication assessment, preparation, and monitoring, problem-solving and critical thinking, and written/verbal communication.

PHA 541. Hospital Management Advanced Pharmacy Practice Experience. 5 credits. (Elective)
The Hospital Management Advanced Pharmacy Practice Experience (APPE) is an elective rotation that provides insight on how to manage distributive as well as clinical functions within a hospital pharmacy environment. This rotation is completed with a hospital pharmacy director or manager. This course is repeatable to a maximum of 10 credit hours. P. Successful completion of all didactic coursework in the Pharm.D. curriculum.

PHA 542. Elective Drug Information Advanced Pharmacy Practice Experience. 5 credits. (Elective)
The Drug Information Advanced Pharmacy Practice Experience (APPE) allows the student to provide drug information services to pharmacists and other healthcare professionals. Emphasis is placed on how to receive requests, collect background information, conduct a systematic search, and provide an evidence-based recommendation based on a critical analysis of medical literature. The student will develop a working knowledge of relevant practice resources as well as develop the ability to critically evaluate such resources. The student may also have the opportunity to become involved with the evaluation of drugs for formulary inclusion, quality assurance/drug usage evaluation activities, news publications, scholarly activities, and Pharmacy and Therapeutics Committee Support. This course is repeatable to a maximum of 10 credit hours. P. Successful completion of all didactic coursework in the Pharm.D. curriculum.

PHA 543. Poison Center Advanced Pharmacy Practice Experience. 5 credits. (Elective)
The Poison Center Advanced Pharmacy Practice Experience (APPE) is an elective pharmacy rotation which offers students an opportunity to become familiar with the operation of a poison center. During the rotation, the students develop skills necessary for handling calls to a poison center while enhancing their knowledge base in clinical toxicology. This course is repeatable to a maximum of 10 credit hours. P. Successful completion of all didactic coursework in the Pharm.D. curriculum.

PHA 545. Nuclear Medicine Advanced Pharmacy Practice Experience. 5 credits. (Elective)
The Nuclear Medicine Advanced Pharmacy Practice Experience (APPE) is an elective rotation which introduces the student to nuclear pharmacy and its applications to clinical nuclear medicine. The student will be exposed to the fundamentals of radiopharmaceutical preparation and utilization within a centralized nuclear pharmacy. P. Successful completion of all didactic coursework in the Pharm.D. curriculum.

PHA 546. Veterinary Advanced Pharmacy Practice Experience. 5 credits. (Elective)
The Veterinary Advanced Pharmacy Practice Experience (APPE) is an elective rotation where students will obtain knowledge and skills working with animals in a veterinary medicine setting. This course will provide valuable instruction on the uses and indications of human and veterinary labeled medications to treat diseases affecting companion, exotic, and food animals. Rotation settings may include: veterinary pharmacies, hospitals, and clinics. Specific specialties depending on setting may include: pet health, small animal internal medicine, anesthesia, ophthalmology, exotic/zoo animal and wildlife medicine, equine medicine and surgery, agricultural practice, cardiology, oncology, radiology, and dermatology. This course is repeatable to a maximum of 10 credit hours. P. Successful completion of all didactic coursework in the Pharm.D. curriculum.

PHA 550. Industry Advanced Pharmacy Practice Experience. 5 credits. (Elective)
This Industry Advanced Pharmacy Practice Experience (APPE) is an elective rotation where the student learns the responsibilities of the industry pharmacist. The student observes various activities of the drug industry, such as research and development, manufacturing quality control, clinical testing, information support, marketing, and regulatory affairs. This course is repeatable to a maximum of 10 credit hours. P. Successful completion of all didactic coursework in the Pharm.D. curriculum.

PHA 551. Research Advanced Pharmacy Practice Experience. 5 credits. (Elective)
The Research Advanced Pharmacy Practice Experience (APPE) is an elective rotation designed to provide students with experience in research design and development, performance of experiments, data collection and analysis, the peer review process, and animal or human research regulations. It is recommended that students have previously taken directed independent research, PHA 399 or PHA 499. This course is repeatable to a maximum of 10 credit hours. P. Successful completion of all didactic coursework in the Pharm.D. curriculum.

PHA 560. Elective Acute Care Advanced Pharmacy Practice Experience. 5 credits. (Elective)
The Acute Care Advanced Pharmacy Practice Experience (APPE) is a clinical rotation providing students an opportunity to provide medication therapy management and pharmaceutical care to adult patients in an inpatient acute care environment. This course is repeatable to a maximum of 10 credit hours. P. Successful completion of all didactic coursework in the Pharm.D. curriculum.

PHA 563. Infectious Disease Advanced Pharmacy Practice Experience. 5 credits. (Elective)
The Infectious Disease (ID) Advanced Pharmacy Practice Experience (APPE) is an elective clinical rotation in which the student gains competency and proficiency in the medical management of patients with infectious diseases in the hospitalized setting. This course is repeatable to a maximum of 10 credit hours. P. Successful completion of all didactic coursework in the Pharm.D. curriculum.

PHA 566. Oncology Advanced Pharmacy Practice. 5 credits. (Elective)
The Hematology/Oncology Advanced Pharmacy Practice Experience (APPE) is an elective clinical rotation that is intended to provide the student with advanced experiential training in providing pharmaceutical care for oncology patients. The student will gain a better understanding of the care of a cancer patient, including antineoplastics, toxicity management, supportive care, and the administrative functions of an oncology pharmacist. This rotation may be completed in an acute care setting or an ambulatory care setting. This course is repeatable to a maximum of 10 credit hours. P. Successful completion of all didactic coursework in the Pharm.D. curriculum.

PHA 568. Critical Care Advanced Pharmacy Practice Experience. 5 credits. (Elective)
The Critical Care Advanced Pharmacy Practice Experience (APPE) is a clinical elective rotation in which the student gains competency in patient medical management in the intensive-care unit of a hospital. This course is repeatable to a maximum of 10 credit hours. P. Successful completion of all didactic coursework in the Pharm.D. curriculum.

PHA 569. Cardiology Advanced Pharmacy Practice Experience. 5 credits. (Elective)
The Cardiology Advanced Pharmacy Practice Experience (APPE) is an elective clinical rotation that will develop the student's ability to make rational decisions concerning cardiovascular medications in the patient care setting. The student will acquire specialized knowledge concerning major cardiovascular disease states, invasive and noninvasive cardiovascular diagnostic techniques and the pharmacology, pharmacokinetics, and clinical use of cardiac drugs. This rotation setting is most often inpatient, but in some cases may be in an ambulatory setting or a combination of both. This course is repeatable to a maximum of 10 credit hours. P. Successful completion of all didactic coursework in the Pharm.D. curriculum.

PHA 570. Psychiatry Advanced Pharmacy Practice Experience. 5 credits. (Elective)
The Psychiatry Advanced Pharmacy Practice Experience (APPE) is an elective clinical rotation that offers students the opportunity to provide medication therapy management to mentally ill patients in an inpatient acute care or outpatient environment. The student acts as a member of the mental health care team and is involved with patient monitoring, decisions regarding drug therapy, patient medication counseling and provision of drug information to team members. Emphasis within the rotation is focused on teaching the student how to provide medication therapy management to the person with a mental illness and communication with patients and the mental health care team. This course is repeatable to a maximum of 10 credit hours. P. Successful completion of all didactic coursework in the Pharm.D. curriculum.

PHA 572. Pediatrics Advanced Pharmacy Practice Experience. 5 credits. (Elective)
The Pediatrics Advanced Pharmacy Practice Experience (APPE) is an elective clinical rotation in which the student gains competencies in the medical management of patients in the neonatal/pediatric populations. The setting for this rotation may be inpatient (hospital), outpatient (clinic), a combination of inpatient/outpatient, neonatal/pediatric intensive-care unit or pediatric unit/clinic. This course is repeatable to a maximum of 10 credit hours. P. Successful completion of all didactic coursework in the Pharm.D. curriculum.

PHA 573. Nutrition Support Advanced Pharmacy Practice Experience. 5 credits. (Elective)
The Nutrition Support Advanced Pharmacy Practice Experience (APPE) is a clinical elective rotation with a pharmacy preceptor on a nutrition or metabolic support service which provides inpatient parenteral and enteral nutrition therapies. Students will gain experience reviewing patient's labs and recommending adjustments to their therapy. P. Successful completion of all didactic coursework in the Pharm.D. curriculum.

PHA 574. Neurology Advanced Pharmacy Practice Experience. 5 credits. (Elective)
The Neurology Advanced Pharmacy Practice Experience (APPE) is a clinical elective rotation in which the student gains competency in medical management of patients with neurological disorders in the inpatient hospital and/or ambulatory clinic environments. This course is repeatable to a maximum of 10 credit hours. P. Successful completion of all didactic courses of Pharm.D.

PHA 575. Transition of Care Advanced Pharmacy Practice Experience. 5 credits. (Elective)
The Transition of Care Advanced Pharmacy Practice Experience (APPE), is an elective, inpatient hospital clinical rotation intended to provide students with advanced experiential training in medication management and counseling provided for patients upon discharge. The skills developed in this rotation include: communicating verbally with physicians and other healthcare professionals regarding discharge medication orders, coordinating discharge patient care, documenting services, provider counseling and educating patients about their discharge prescription medications, and reviewing patient discharge medication orders for completeness and accuracy. P. Successful completion of all didactic courses within the PharmD curriculum.

PHA 576. Transplant Advanced Pharmacy Practice Experiences. 5 credits.
The Clinical Specialty Elective Advanced Pharmacy Practice Experience (APPE) is a clinical rotation designed to ensure student pharmacist preparedness for entry-level practice. This experience allows the student to practice and enhance Pharmacist's Patient Care Process (PPCP) skills as they apply to direct, specialized patient care practice within either the ambulatory or hospital (inpatient) acute care environment. Emphasis is placed on students becoming active members of the healthcare team as they manage patient medication therapy, identify, resolve, and prevent medication-related problems, as well as effectively communicate with other healthcare professionals. The primary skills developed in this rotation include patient and medication assessment, individualized patient care plan development, written and verbal communication skills, and documentation of patient care plans and encounters. Students should work with common disease states and pharmacotherapy generally encountered in the corresponding specialized patient care setting. This course is repeatable to a maximum of 10 credit hours. Prereq: Successful completion of all didactic and introductory experiential courses within the PharmD curriculum.

PHR 241. Pharmacology I. 0-4.5 credits.
This course can be offered on campus or web-based. A comprehensive coverage of the major drug groups and their mechanisms. The emphasis is on human pharmacology and the rational basis for therapeutics. Specific drug classes will be discussed with emphasis on mechanism of action, organ systems affected by the drugs, their pharmacokinetics, therapeutic indications, untoward effects, contraindications and drug-drug interactions. P. PHA 301; PHA 404; MIC 541; CO: PHA 337.

PHR 242. Pharmacology II. 0-4.5 credits.
The pharmacy pharmacology course provides a comprehensive coverage of the major drug groups and their mechanisms. The emphasis is on the pharmacological basis for the therapeutic use of drugs. Specific drug classes will be discussed with emphasis on mechanism of action, organ systems affected by drugs, adverse effects, contraindications, pharmacokinetics, therapeutic indications and drug-drug interactions. P. PHR 241.

PHR 350. Introduction to Neuropharmacology. 3 credits.
This course is designed as an introductory course in pharmacology and neuropharmacology for students who have majored in or who have professional interests in biology, chemistry, biochemistry, psychology, pre-health professions and pre-medicine. Pharmacology is more than the study of the therapeutic uses of drugs. It is a science which uses the basic concepts of biology and chemistry to determine how drugs affect the organism. Neuropharmacology applies the basic principles of pharmacology to the nervous system and the tissues and organs that the nervous system regulates. Pharmacology gives a unique perspective in understanding how cells, organ systems, and organisms function. Pharmacology uses a systematic approach to investigate drug mechanisms causing a biological event for therapeutic use–from the molecular level to the whole animal. These pharmacological approaches also allow us to study how biological systems fail to function, providing information on the etiology of disease. Pharmacology research is essential for the development, testing and clinical use of drugs to treat disease. P. BIO 201, 202, CHM 203, 321, Jr. stdg. or IC.

PHR 461. Integrative and Alternative Medicine. 1-8 credits.
This Senior Elective is a critical survey of commonly employed complementary and alternative therapies.

PHR 531. Topics in Pharmacology and Drug Discovery Journal Club. 1 credit. FA
The most ground-breaking studies (classic through recent) in the field of pharmacology are discussed in a round-table format. Students will learn the basics of the scientific method, study design, experimental technique theory and general chemical principles, physiochemical properties and drug-receptor interactions used to derive structure-activity relationships for important drug classes and predict biological properties.

PHR 532. Hot Topics in Neuroscience Journal Club. 1 credit. SP
Continuation of PHR 531. P. DC.

PHR 536. Drugs and Drug Targets. 2 credits.
The course Drugs and Drug Targets offers a detailed exploration of fundamental concepts underlying drug action and provides foundational knowledge necessary to develop into a research scientist, educator or other position requiring understanding of drugs and drug targets. The class format will include didactic lectures with open discussions.

PHR 537. Fundamentals of Neuroscience. 3 credits. FA, OD
This course will provide a detailed exploration of cellular, molecular and systems neuroscience and provide foundational knowledge necessary to becoming a neuroscientist. The class format will include didactic lectures with open discussions and self-directed computer simulated learning activities.

PHR 595. Directed Independent Study. 0-5 credits. FA, OD, SP, SU
Supervised independent projects that may include laboratory work, assigned readings, research papers, etc. Available in autonomic pharmacology, cardiovascular pharmacology, exocrine pharmacology, and neuropharmacology. P. Undergraduate or Gr. stdg. and DC.

PHR 597. Directed Independent Research. 1-4 credits. FA, OD, SP, SU
Supervised independent research for motivated students to become involved in ongoing original research projects of the pharmacology faculty. P. Undergraduate or Gr. stdg. and DC.

PHR 631. Medical Pharmacology I. 5 credits. FA
Human pharmacology and therapeutics. Lectures, conferences, and demonstrations.

PHR 632. Medical Pharmacology II. 5 credits. SP
A continuation of Medical Pharmacology I.

PHR 650. Introduction to Neuropharmacology. 3 credits. SP
This course is designed as an introductory course in pharmacology and neuropharmacology for students who have majored in or who have professional interests in biology, chemistry, biochemistry, psychology, pre-health professions and pre-medicine. Pharmacology is more than the study of the therapeutic uses of drugs. It is a science which uses the basic concepts of biology and chemistry to determine how drugs affect the organism. Neuropharmacology applies the basic principles of pharmacology to the nervous system and the tissues and organs that the nervous system regulates. Pharmacology gives a unique perspective in understanding how cells, organ systems, and organisms function. Pharmacology uses a systematic approach to investigate drug mechanisms causing a biological event for therapeutic use--from the molecular level to the whole animal. These pharmacological approaches also allow us to study how biological systems fail to function, providing information on the etiology of disease. Pharmacology research is essential for the development, testing and clinical use of drugs to treat disease.

PHR 667. Developmental Biology. 4 credits.
This is the graduate course designation for the undergraduate course BIO 467. Students are expected to fulfill all of the requirements for the undergraduate course (including the laboratory). To fulfill the graduate component of this course, students will write a research review article throughout the semester under the supervision of Dr. Kristina Simeone (and their research PI) that bridges material learned in class and their research.

PHR 711. Receptor and Molecular Pharmacology. 3 credits. AY, SP
Exhaustive treatment of receptor and molecular pharmacology that considers historical development of concepts, radioligand receptor binding, drug-receptor interactions, receptor characterization and isolation, and signal transduction.

PHR 715. Foundational Science. 4 credits. OD
This intensive foundation course introduces the students to the scientific fields of cell and molecular biology, genetics, immunology and pharmacology.

PHR 720. Fundamentals of Brain Imaging, Recording, and Stimulation. 3 credits.
This course will provide an advanced introduction to common techniques/methods used in the primate brain for recording (e.g., multiunit recordings, electrocorticography, electroencephalography, and magnetoencephalography), imaging (e.g., magnetic resonance), and stimulating (transcranial magnetic stimulation, transcranial direct-current and alternating current stimulation). The class format will include didactic lectures with open discussions.

PHR 721. Systems Neuroscience. 3 credits.
This course provides an in-depth coverage of the structure and function of human brain networks, including all major sensory systems (e.g., vision, motor) and higher- order neurocognitive systems (e.g., working memory, attention). Interactions among distinct neuronal networks during information processing will also be explored. The class format will include didactic lectures with open discussions. P. PHR 537.

PHR 722. Theories & Advancements in Developmental Cognitive Neuroscience. 2 credits.
This course will provide students with a foundational knowledge of major theories that govern research in developmental cognitive neuroscience, as well as historical context and advancements in the field. Students will engage in advanced Socratic discussion, facilitate class sessions, and reflect on the practical implications of multiple developmental theories in historical and present-day research contexts. The class format will include didactic lectures, Socratic discussions and reflection on the practical implications of theories in historical and present-day research contexts. P. PHR 537.

PHR 723. Physiology of Neuronal Populations. 3 credits.
This course will provide a foundation in the concepts, methods, and goals of population-level neurophysiology covering mini- and macro-columns and neural systems of the primate brain (e.g., motor system). Students will also learn in-depth functional neuroanatomy of supra-thalamic structures. The class format will include didactic lectures with open discussions. P. PHR 537.

PHR 750. Research Discussions In Pharmacology & Neuroscience. 1 credit. FA, SP, SU
Students will meet with their course director once weekly to discuss laboratory research topics as assigned by the course director. Topics will usually be pertinent to the research activity of the course director. Instruction will be given through a combination of didactics, small group sessions, student presentations and independent study. P. DC.

PHR 760. Research Rounds In Pharmacology & Neuroscience. 1-3 credits. FA, SP
This course will teach students how to formally present their research progress and results, and will provide students with frequent feedback by faculty members and fellow students. P. DC.

PHR 790. Research Laboratory Rotations. 1-5 credits. FA, OD, SP, SU
Laboratory rotations in which graduate students perform or observe methods used in pharmacological research. The value of the method and its application to the research efforts of the pharmacology faculty are described in detail. P. DC.

PHR 791. Pharmacology & Neuroscience Seminar. 1 credit. FA, SP
Seminars in selected subjects for pharmacology & neuroscience graduate students.

PHR 794. Special Topics in Pharmacology & Neuroscience. 1-4 credits. FA, OD, SP, SU

PHR 795. Directed Independent Study. 1-6 credits. FA, SP, SU

PHR 797. Master's Directed Independent Research. 1-6 credits. FA, SP, SU
Supervised original research. P. DC.

PHR 799. Master's Thesis. 1-6 credits. FA, SP, SU
Review of the literature and research data; writing of the thesis. Student must register for this course in any term when engaged in formal preparation of the Master's thesis; however, six credit hours are the maximum applicable toward the degree. P. DC.

PHR 897. Doctoral Directed Independent Research. 1-6 credits. FA, SP, SU
Supervised original research. P. DC.

PHR 899. Doctoral Dissertation. 1-6 credits. FA, SP, SU
This investigative work is the principal area of research carried out by the candidate during doctoral studies. It is conducted under the direct supervision of the candidate's major adviser and dissertation committee in preparation for the doctoral dissertation. Twenty credit hours are the maximum applicable toward the degree. Students will register for this course during formal preparation of the doctoral dissertation. P. PHR 897.

PTD 499. Directed Independent Study. 0-6 credits.
Independent study time during which students engage in a self-designed learning experience under the direction and guidance of a designated faculty member. This experience may occur in any area of physical therapy.

PTD 500. Human Anatomy. 7 credits.
Human Anatomy provides a dissection-based anatomical study of the human body. Gross anatomy, surface anatomy and embryology of the human body is explored. Students are expected to learn gross anatomy through reading, group study and dissection. Lecture and concept maps will be used in the course to introduce and reinforce anatomical concepts. Competence in applying anatomical concepts to clinical problems faced by the physical therapist is the expected outcome of the course. P. Enrollment in the Physical Therapy program.

PTD 501. Exercise Physiology and Wellness. 2 credits.
This course is designed to provide students with knowledge and application of bioenergetics related to both acute and chronic physiological adaptations of aerobic, anaerobic, and strengthening exercise. Assessment of body composition will also be measured utilizing a variety of techniques. In addition students will address specific nutritional needs and ergogenic supplementation for individuals with active lifestyles from youth to geriatric populations. P. Enrollment in the Physical Therapy program.

PTD 502. Patient Management I. 1 credit.
This course is an introduction to patient management with a focus on the healthy individual or population. This is the first semester of a two-part series. Topics include physical therapists as wellness experts, an introduction to vital signs and patient assessment, wellness and health promotion, gait and balance assessment, giving and receiving feedback, community needs assessment, and program selection. Components of this course will be incorporated into the integrated labs to expand your practice and understanding. P. Enrollment in the Physical Therapy program.

PTD 503. Behavioral and Social Science. 2 credits.
Effective human interaction is central to the physical therapist's varied roles in providing physical therapy care as an integral member of the health care team in a diverse society. This course provides students with foundational knowledge and experience in the behavioral sciences as applied to clinical practice. Theory and principles of human communication and behavior will be explored to facilitate an awareness of self and others, enhancing interactions with patients/clients, family, caregivers, health practitioners and consumers. In addition, evidence-based strategies for understanding and facilitating adaptations to illness and disability across the lifespan are introduced. P. Enrollment in the Physical Therapy program.

PTD 504. Evidence Based Practice I. 2 credits.
This course is the first of a two part series designed to develop students' inquiry skills as consumers of the literature with the ability to critically analyze and evaluate research evidence, as well as to identify researchable problems and questions. Emphasis is placed on critiquing clinical research focused on measurement, diagnosis, prevention, and treatment outcomes. Principles and application of inquiry and investigation are explored in relation to the clinical environment. Research design and statistical methods are discussed and used in the analysis of research literature. An evidence-based decision making process will be modeled, emphasizing applications for use in clinical practice. Emphasis is placed on critiquing clinical research focused on measurement, diagnosis, prevention, and treatment outcomes. P. Enrollment in the Physical Therapy program.

PTD 505. Introduction to Imaging for Physical Therapists. 1 credit.
This course provides foundational knowledge about common diagnostic imaging techniques encountered in clinical practice by physical therapists. Plain film radiography, magnetic resonance imaging, computed tomography, ultrasound imaging and nuclear medicine imaging techniques will all be introduced. The course will cover the basic physics and principles for viewing and interpreting these imaging studies. This course will integrate with other basic science coursework, such as human anatomy, and future clinical science courses, such as musculoskeletal, cardiovascular and pulmonary, and neurologic physical therapy. P. Enrollment in the Physical Therapy program.

PTD 506. Integrated Laboratory I. 1 credit.
This course is designed to synthesize content from anatomy, exercise physiology, patient management, behavioral and social sciences, and medical imaging. Clinical reasoning and psychomotor skill development will be emphasized. Students will integrate and apply elements of the patient/ client management model across the lifespan and throughout the continuum of care to promote excellence in physical therapy practice. P. Enrollment in the Physical Therapy program.

PTD 507. Emergency Medical Responder. 2 credits.
The primary focus of the Emergency Medical Responder (EMR) is to initiate immediate lifesaving care to patients, in a variety of settings. An EMR possesses the basic knowledge and skills necessary to provide lifesaving interventions while awaiting additional EMS or other medical specialists' arrival, and to assist higher level medical personnel at the scene of an emergency or during transport. Course content will include an introduction to emergency medical services, airway management and a review of professional rescuer CPR, patient assessment, initial recognition and interventions for medical and trauma emergencies, emergencies involving special patient populations, and EMS operations. P. Enrollment in the Physical Therapy program.

PTD 508. Introduction to Professional Formation. 1 credit.
This course will introduce and discuss the role of the physical therapy student in the professional academic program and within the profession of physical therapy. Students will learn responsibilities of being a health care provider and expectations for professional practice/conduct in order to begin their personal development as physical therapists. Strategies for lifelong learning, critical self-reflection, and development of a community of practice will be emphasized. Students will be introduced to clinical education policies, procedures, and expectations. P. Enrollment in the Physical Therapy program.

PTD 510. Movement Science. 4 credits.
Study of selected anatomical, structural, and functional properties of human connective tissues, muscular tissues, nervous tissues, and skeletal structures. Emphasis will be placed on mechanical, neuroregulatory, and muscular influences upon normal and pathological motion. P. Enrollment in the Physical Therapy program with satisfactory completion of all coursework to date.

PTD 511. Health Conditions for the Physical Therapist. 3 credits.
This course applies current theory of the physical therapy management of patients with acute and chronic health conditions commonly seen in practice. Primary content area will include diseases or conditions of the immune, endocrine and metabolic, lymphatic, hematologic, gastrointestinal, hepatic, pancreatic and biliary, renal and urologic, and genital and reproductive systems. The pathophysiology, medical diagnosis, clinical course, medical/surgical/health care team management and prevention will be presented as a foundation for developing a physical therapy plan of care. P. Enrollment in the Physical Therapy program with satisfactory completion of all coursework to date.

PTD 512. Patient Management II. 3 credits.
This course is a continuation to patient management concepts with a focus on the individual who is acutely or chronically ill. This is the second semester of a two-part series. Topics include infection control, management of equipment found within inpatient settings, body mechanics, bed mobility, advanced transfer training, gait training with assistive devices, documentation, and an introduction to manual techniques. P. Enrollment in the Physical Therapy program with satisfactory completion of all coursework to date.

PTD 513. Cardiovascular and Pulmonary Physical Therapy I. 3 credits.
This is the first of a two-course sequence designed to provide the student in the physical therapy management of patients/clients with diagnoses involving the cardiovascular and pulmonary systems. Physical therapy examination, evaluation, prognosis, diagnosis, intervention, and outcome assessment across the lifespan will be emphasized across the continuum of care. Student learning experiences will include lecture, small group discussions, projects and case study preparation, and clinical participation. P. Enrollment in the Physical Therapy program with satisfactory completion of all coursework to date.

PTD 514. Evidence Based Practice II. 2 credits.
This course will help develop students' inquiry skills as consumers of the literature with the ability to critically analyze and evaluate research evidence, as well as to identify researchable problems and questions. Emphasis is placed on critiquing clinical research focused on qualitative methods, treatment outcomes, clinical practice guidelines, systematic reviews, and meta-analysis. An evidence-based decision making process will be modeled, emphasizing application for use in clinical practice. P. Enrollment in the Physical Therapy program with satisfactory completion of all coursework to date.

PTD 516. Integrated Laboratory II. 2 credits.
This course is the second in a series of six laboratories designed to synthesize content from Cardiovascular and Pulmonary PT I, Kinesiology, PT Management II, and Evidence-based Practice. Clinical reasoning and psychomotor skill development will be emphasized. Students will integrate and apply elements of the patient/client management model across the lifespan and throughout the continuum of care to promote excellence in physical therapy practice. P. Enrollment in the Physical Therapy program with satisfactory completion of all coursework to date.

PTD 518. Professional Formation I. 1 credit.
This course is an introduction to professional components of Physical Therapy practice. This course will introduce students to topics addressing personal/professional reflection, professional organizations and leadership, and the role of physical therapists and other healthcare providers in clinical practice. Students will discuss APTA core values and responsibilities of being a professional. Students will also initiate preparation for clinical education experiences including development of a clinical education plan, resume, cover letter and objectives.

PTD 520. Neuroscience. 3 credits.
This course provides an overview of the development, structure, and function of the human nervous system. The emphasis of this course will be on human neurobiology as it relates to the profession of physical therapy and rehabilitation; however the material covered is relevant to any healthcare profession. Research concerning the pathophysiology of nervous system disorders and the repair and regeneration of nervous system tissue will be introduced. P. Enrollment in the Physical Therapy program with satisfactory completion of all coursework to date.

PTD 521. Integumentary Physical Therapy. 2 credits.
This course follows the clinical application of physical therapy skills within the integumentary system using the patient management model. A case-based approach will be utilized to teach clinical skills and application with the International Classification of Functioning, Disability, and Health (ICF) will occur. P. Enrollment in the Physical Therapy program with satisfactory completion of all coursework to date.

PTD 522. Musculoskeletal Physical Therapy I. 2 credits.
Musculoskeletal Physical Therapy I incorporates the study of physical therapy and the medical management of musculoskeletal disorders of the lower limb. All aspects of physical therapy management of musculoskeletal conditions will be covered, including examination, evaluation, intervention, and prognosis. practical application of course content will occur in Integrated Laboratory III.

PTD 526. Integrated Laboratory III. 2 credits.
This course is the third in a series of six laboratories designed to synthesize content from Neuroscience, Integumentary Physical Therapy, and Musculoskeletal Physical Therapy I. Clinical reasoning and psychomotor skill development will be emphasized. Students will integrate and apply elements of the patient/client management model across the lifespan and throughout the continuum of care to promote excellence in physical therapy practice. P. Enrollment in the Physical Therapy program with satisfactory completion of all coursework to date.

PTD 528. Professional Formation II. 1 credit.
This course is a continuation of student professional development. Students will continue to prepare for clinical experiences by participating in and completing mandatory training needed for patient care and self/Clinical Instructor Assessments. In addition students will explore laws, rules and policies that regulate the practice of physical therapy, including discussion ethical and moral considerations for pro bono practice. Students will learn how the profession of physical therapy can engage in the process of influencing policies related to political and patient advocacy. Students will demonstrate knowledge of State Practice Acts and other entities that regulate practice. Students will learn effective communication skills for successful interaction with patients, clinical instructors and other professionals in clinical practice. Students will complete all necessary requirements for their first clinical experience. P. Enrollment in the Physical Therapy program with satisfactory completion of all coursework to date.

PTD 530. Physical Therapy Pharmacotherapeutics. 2 credits.
This course is designed to help students gain a broad understanding of fundamental concepts and principles of drug action, drug interactions, drug compliance and dosage recommendations. Utilization of knowledge of physiology and neuroscience to develop an understanding of medications' effects on human performance throughout the life span within the context of various physical and mental dysfunctions will be expected. P. Enrollment in the Physical Therapy program with satisfactory completion of all coursework to date.

PTD 531. Pain. 2 credits.
This course will address theoretical models for understanding the basis for pain across the lifespan. Integration of pain assessment and physical therapy pain management will be addressed. Emphasis will be placed on the utilization of contemporary evidence to better inform a patient-centered treatment approach. Students will also gain insights into interdisciplinary pain management. P. Enrollment in the Physical Therapy program with satisfactory completion of all coursework to date.

PTD 532. Musculoskeletal Physical Therapy II. 3 credits.
Musculoskeletal Physical Therapy II incorporates the study of physical therapy and the medical management of musculoskeletal disorders of the upper limb and some contemporary intervention techniques. All aspects of physical therapy management of musculoskeletal conditions will be covered, including examination, evaluation, intervention, and prognosis. Practical application of course content will occur in Integrated Laboratory IV.

PTD 533. Motor Control and Motor Learning. 2 credits.
This course will provide the students with a foundation in the latest theories of motor control and motor learning as well as an introduction to evidence-based tools for effective application of these concepts to physical therapy practice. Emphasis is placed on a task-oriented approach to examination and interventions related to posture, balance, sensory integration, mobility and upper extremity function throughout the lifespan to promote an understanding of normal motor development and the effects of aging on the production of movement. P. Enrollment in the Physical Therapy program with satisfactory completion of all coursework to date.

PTD 534. Neuromuscular Physical Therapy I. 3 credits.
This course is part of the neuromuscular course sequence preparing the student to determine all components of the patient management model (physical therapy examination, evaluation, diagnosis, prognosis, and intervention) for the adult and child with acquired or congenital nervous system dysfunction and their social unit. Emphasis will be placed on the health conditions of the pediatric patient as well as adults with stroke and vestibular dysfunction. Facilitation of clinical reasoning skills incorporating all factors of the ICF framework including the context of individual growth, development, and change across the lifespan will be utilized to advance the student's thought process. Active learning strategies including case application and discussion, video case analysis, and incorporation of evidence-based practice will be used to enhance learning. P. Enrollment in the Physical Therapy program with satisfactory completion of all coursework to date.

PTD 536. Integrated Laboratory IV. 4 credits.
This course is the fourth in a series of six laboratories designed to synthesize content from Neuroscience Physical Therapy I, Musculoskeletal Physical Therapy II, Motor Control and Motor Learning, and Pain courses in a comprehensive, patient-centered approach across the lifespan. Clinical reasoning and psychomotor skill development will be emphasized. Students will integrate and apply elements of the patient/client management model across the lifespan and throughout the continuum of care to promote excellence in physical therapy practice. P. Enrollment in the Physical Therapy program with satisfactory completion of all coursework to date.

PTD 560. Professional Practice I. 6 credits.
This course is comprised of a six-week clinical education experience focusing on clinical learning and developing self-responsibility, self-assessment, and an understanding of professional competence. Students participate in an assigned clinical site. P. Enrollment in the Physical Therapy program with satisfactory completion of all coursework to date.

PTD 580. Independent Study in Physical Therapy. 0-6 credits.
Independent Study in Physical Therapy offers an opportunity for physical therapist students to develop and work in a course of study under the direction and guidance of a faculty member. With agreement and mentoring of a faculty member, a student may 1) pursue, in depth, an area of the curriculum, 2) explore a physical therapy topic not covered in the curriculum or 3) assist with research in a faculty member's area of interest. P. Instructor approval and academic advisor consent.

PTD 581. Special Topics in Rehabilitation Science. 1 credit.
This seminar course will explore critical questions, problems, and contemporary issues in rehabilitation research. Specific emphasis will be on interpretation of both laboratory and clinical research. Topics vary with each iteration of the course permitting students to repeatedly enroll for the course but with each covering a different topic. P. Instructor and academic advisor consent.

PTD 582. Rehabilitation Science Research Practicum. 2 credits.
This course provides an opportunity for students to conduct research projects, under the direction and guidance of a faculty member. The student will develop skills in research design, data collection, data analysis, and dissemination. This course is structured as a contact in which the student and faculty advisor establish specific learning objectives, a defined scope of work, and specific products to be completed which may include a presentation or publication. P. Enrolled in the professional PT program with satisfactory completion of all coursework to date. Instructor and academic advisor consent.

PTD 583. Special Topics in Health Science Education Research. 1 credit.
This seminar course will explore critical questions, problems, and contemporary issues in health professions education research. Emphasis is on application of the learning and social sciences in health professions education across the learner continuum. Topics vary with each course iteration permitting students and residents to repeatedly enroll in the seminar.

PTD 590. Directed Study in Physical Therapy. 0-6 credits.
The purpose of Directed Study in Physical Therapy is to ensure that a student who is re-entering a program after a temporary withdrawal or to retake a required course is prepared and safe to re-enter the curriculum and/ or clinical experiences after an absence. PTD 590 is composed of the comprehensive clinical practical and written examinations for the: 1) student's last successfully completed semester in the curriculum. 2) re- enrolled semester if the student is re- taking a course other than Integrated Laboratory I- VI. The course may also include any content assigned in a Corrective Action Plan to prepare students for these examinations. P. Enrolled full time in the professional program and re-entering the program after a temporary withdrawal or to retake a required course in the curriculum (other than Integrated Laboratory I-VI); Instructor consent.

PTD 592. CCPE Performance Remediation. 1 credit. FA, SP
The purpose of CCPE Performance Remediation is to address unsatisfactory comprehensive clinical performance exam at the end of semesters Fall I, Spring I or Fall II. The student will work with their faculty advisor and the Integrated Laboratory Instructor of Record to develop a plan for remediation of performance deficits that were identified during that semester's comprehensive clinical performance exams. Satisfactory performance of remediated deficiencies is the expected outcome of the course. This course cannot be repeated for more than one unsatisfactory semester CCPE.

PTD 600. Health Services. 2 credits.
A study of health care policy and delivery as it affects the practice of physical therapy. Principles of access, cost and quality of health services are introduced as they affect patient, payer and provider. The course includes the examination of government and regulatory systems; insurance; economic, political and cultural forces; professional and social values which influence contemporary physical therapist practice. The organization of the health care system where physical therapists work is introduced. The student will be able to apply the information in this course to the completion of a market analysis for a physical therapist practice. The federal efforts to reform the health care system will be explored. P. Enrollment in the Physical Therapy program with satisfactory completion of all coursework to date.

PTD 601. Ethics in Physical Therapy Practice. 3 credits.
This course prepares physical therapy students to approach ethical dilemmas objectively with a thorough understanding of professional moral responsibility. Students learn to distinguish ethical from other kinds of issues in health care; identify the morally relevant features of a case; identify the options open to a therapist faced with a moral problem; provide justification for the best options; consider counter arguments for one's positions; and identify deliberate actions consistent with respect for human dignity. P. Enrollment in the Physical Therapy program with satisfactory completion of all coursework to date.

PTD 602. Musculoskeletal Physical Therapy III. 2 credits.
Musculoskeletal Physical Therapy III incorporates the study of physical therapy and the medical management of musculoskeletal disorders of the spine and related disorders. All aspects of physical therapy management of musculoskeletal conditions will be covered, including examination, evaluation, intervention, and prognosis. Practical application of course content will occur in Integrated Laboratory V.

PTD 604. Neuromuscular Physical Therapy II. 3 credits.
This course is part of the neuromuscular sequence and builds on the knowledge and skills gained in Neurobiology, Motor Control and Motor Learning and Neuromuscular Physical Therapy I. Specifically, this course continues to prepare the student to determine all components of the patient management model for patients with neurologic dysfunction including traumatic brain injury, spinal cord injury, progressive disorders, non-progressive disorders, and peripheral neuropathy. Intervention strategies focus on applying the International Classification of Functioning, Disability, and Health framework to patient cases and improving functional recovery. Facilitation of clinical reasoning skills incorporating all factors of the ICF framework will be utilized to advance the student's thought process. Active learning strategies of case application and discussion, video case analysis, and incorporation of evidence-based practice will be used to enhance learning. P. Enrollment in the Physical Therapy program with satisfactory completion of all coursework to date.

PTD 606. Integrated Laboratory V. 2 credits.
This course is the fifth in a series of six laboratories designed to allow the student to apply, integrate, and demonstrate psychomotor skills relevant to content from Neuromuscular Physical Therapy II, Musculoskeletal Physical Therapy III and previous clinical courses in the curriculum. Clinical reasoning and psychomotor skill development will be emphasized. Students will integrate and apply elements of the patient/client management model across the lifespan and throughout the continuum of care to promote excellence in physical therapy practice. P. Enrollment in the Physical Therapy program with satisfactory completion of all coursework to date.

PTD 608. Professional Formation III. 1 credit.
Professional Formation III is a continuation of student professional development. This course emphasizes a professional approach to clinically relevant topics such as workplace violence and professional burnout. Professional communications and the role of the professional as an educator and lifelong learner will be explored. Students will engage in topics related to the role physical therapy serves on a global market, including an understanding of organizational structures supporting international rehabilitation. In addition, conceptual applications of social justice, political advocacy, and serving a profession that seeks to address societal needs will be covered. P. Enrollment in the Physical Therapy program with satisfactory completion of all coursework to date.

PTD 610. Physical Therapy Management Systems. 2 credits.
An introduction to management theory and practice in physical therapy including human resources, organizational change, leadership and team building, strategic planning, financial management including reimbursement, quality management, legal and regulatory issues, facility planning and marketing. Management decision making regarding investment, financing and operations is emphasized within the context of a business system. P. Enrollment in the Physical Therapy program with satisfactory completion of all coursework to date.

PTD 611. Introduction to Differential Diagnosis. 2 credits.
An introduction into differential diagnosis as it applies to physical therapy will focus on the diagnostic process in evaluation of musculoskeletal, cardiopulmonary, GI/GU/renal and psychological systems. Emphasis will be on differentiating neuromusculoskeletal problems from systemic conditions, recognizing emerging red flags and deciding on course of action. Readings will be applied to case discussions. P. Enrollment in the Physical Therapy program with satisfactory completion of all coursework to date.

PTD 612. Amputations and Prosthetics. 1 credit.
This course focuses on the physical therapy examination, evaluation, and interventions for patients with amputations/prostheses. Included are the causes and types of limb amputations, a survey of available prosthetic componentry, the multidisciplinary teach approach for care of a person with an amputation and the occupational recreational aspects of prosthetic use. P. Enrollment in the Physical Therapy program with satisfactory completion of all coursework to date or permission of both the Course Director and Department Chair.

PTD 613. Cardiovascular and Pulmonary Physical Therapy II. 2 credits.
This is the second of a two-course sequence designed to prepare the student in the physical therapy management of patients/clients with diagnoses involving the cardiovascular and pulmonary systems. Physical therapy examination, evaluation, prognosis, diagnosis, intervention, and outcome assessment across the lifespan will be emphasized across the continuum of care. Student learning experiences will include lecture, small group discussions, projects and case study preparation, and clinical observations. P. Enrolled in professional physical therapy program with satisfactory completion of all coursework to date.

PTD 615. Medical Imaging: Clinical Correlates for the Physical Therapist. 1 credit.
This course provides the opportunity for students to integrate information from medical imaging studies with other patient data in a case-based format. Students will utilize available clinical decision making guidelines to help make recommendations about whether imaging is needed in a given clinical scenario, and which type of imaging is optimal. They will also use imaging data to guide choices for physical therapy patient management. P. Enrollment in the Physical Therapy program with satisfactory completion of all coursework to date.

PTD 616. Integrated Laboratory VI. 3 credits.
This course is the sixth in a series of six laboratories designed to allow the student to apply, integrate, and demonstrate psychomotor skills relevant to content from Amputations and Prosthetics, Cardiovascular and Pulmonary Physical Therapy II, Medical Imaging II, and Differential Diagnosis with an emphasis on clinical reasoning and psychomotor skill development. Additionally, students in this course will have the opportunity to integrate clinical skills from other courses as they apply to the patient/client management model. During this course, students will have the opportunity to engage in a patient care experience that includes initial examination, treatment, re-assessment and discontinuation of the episode of care. This experience will provide students the opportunity to utilize critical analysis of scientific literature and clinical reasoning for evidence based practice, engage in documentation of patient interactions and demonstrate effective communication skills when interacting with faculty, peers, and patients.

PTD 617. Clinical Electrophysiology. 1 credit.
This course focuses on clinical electrophysiologic examination and evaluation of patients. The learner will safely and correctly use typical electrophysiology measurement equipment to capture and interpret NCV and EMG data. This includes performance and assessment of the results of motor and sensory nerve conduction velocity (NCV) studies of the extremities and the assessment of extremity muscles through the use of monopolar electromyography (EMG). This requires knowledge of normal and abnormal neurophysiology, neuromuscular degeneration and regeneration, and a working knowledge of relevant neuropathic and myopathic disease processes.

PTD 618. Professional Formation IV. 1 credit.
This is the fourth of a four-course sequence threading professional development throughout the didactic curriculum. Students will continue to prepare for clinical experiences by participating in and completing all of the mandatory training needed for patient care and self/Clinical Instructor Assessments. In addition, students will explore topics including the National Physical Therapy Examination (NPTE), hospice and palliative care, advanced clinical reasoning, and post-professional educational opportunities. Students will engage in professional development by participating in and reflecting on community service and/or professional service experiences. Students will also demonstrate a comprehensive synthesis of knowledge by assessment on the TherapyEd practice examination. Additionally, students will actively participate in a 2-day TherapyEd board review course to prepare for the NPTE. P. Enrollment in the Physical Therapy program with satisfactory completion of all coursework to date.

PTD 651. Advanced Sports Rehabilitation I. 1 credit.
This course will focus on clinical management of musculoskeletal injuries that primarily occur with sport related activities. Major topics include prevention, sports-specific rehabilitation, and performance enhancement. P. Enrolled in the professional program with satisfactory completion of all coursework to date. Instructor and academic advisor consent.

PTD 652. Advanced Topics in Pregnancy Post-Partum Rehabilitation. 1 credit.
This course will focus on clinical management of musculoskeletal conditions related to pregnancy and post-partum. Major topics include pregnancy-related low back/pelvic girdle pain, diastasis recti abdominis, stress urinary incontinence, post-partum care, and safe engagement in physical activity.

PTD 661. Advanced Sports Rehabilitation II. 1 credit.
This course will prepare individuals for acute management of injuries and illness that primarily occur with sport related activities. Major topics include assessment and treatment of acute injury or illness, referral and return to activity decisions, and equipment management.

PTD 662. Advanced Topics in Pelvic Health Rehabilitation. 1 credit.
This course will focus on clinical management of musculoskeletal conditions related to pelvic floor dysfunctions. Major topics include stress urinary incontinence, urge urinary incontinence, non-relaxing pelvic floor dysfunction, pelvic organ prolapse, bowel incontinence, and safe engagement in physical activity.

PTD 671. Professional Practice II - Part A. 3 credits.
A continuation of the Professional Practice course sequence. This course focuses on clinical learning and assisting students in developing self-responsibility, self-assessment, and an understanding of professional competence. This course is the first three weeks of a continuous, full-time six-week professional practice experience.

PTD 672. Professional Practice II - Part B. 3 credits.
A continuation of the Professional Practice course sequence. This course focuses on clinical learning and assisting students in developing self-responsibility, self-assessment, and an understanding of professional competence. This course is Part B, the second three weeks of a continuous, full-time six-week professional practice experience.

PTD 680. Professional Practice III. 16 credits.
This course is a 18-week professional practice experience that requires the student to integrate the knowledge and skills from all previous academic and clinical coursework. CO: Enrolled in the professional program with satisfactory progress in all courses to date.

PTD 688. Expert Practice in Physical Therapy. 2 credits.
This is the capstone course for students returning from their extended clinical affiliations. Students are encouraged to reflect upon their professional development to date and recognize the opportunities and professional duties for moving from novice to expert practitioner in the future. Certification as a clinical specialist, graduate school, utilization of the scientific literature, reflection on practice, professional writing and public presentation skills are explored. Life-long learning and the responsibilities/ opportunities of assuming the role of program alumnus related to professional development and the Creighton University mission are emphasized.

PTD 690. Professional Practice IV. 16 credits.
This course is a 16-week professional practice experience that requires the student to integrate the knowledge and skills from all previous academic and clinical coursework. P. Enrolled in the professional program with satisfactory completion of all coursework to date. CO: PTD 688.