<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Instructor(s)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHRD 5001</td>
<td>Introduction to Pharmacy</td>
<td>0.6 cr.</td>
<td>David Thompson, Ph.D. (Fall)</td>
<td>Prerequisites – P1 status. Course introduces students to how the pharmaceutical, chemical and biological sciences relate to each other and the practice of Pharmacy. Experience gained from this course allows students to comprehend how fundamental sciences integrate to form a foundation for pharmacy practice.</td>
</tr>
<tr>
<td>PHRD 5005</td>
<td>Intro Professional Development &amp; Portfolio 1</td>
<td>1.0 cr.</td>
<td>Wes Nuffer, Pharm.D. (Fall)</td>
<td>Prerequisites – P1 status. This course encompasses students’ efforts in introductory pharmacy practice experiences and interprofessional training. A portfolio documents the students’ increasing proficiency in parallel with the curriculum.</td>
</tr>
<tr>
<td>PHRD 5015</td>
<td>Mechanisms of Disease</td>
<td>3.0 cr.</td>
<td>Rob Scheinman, Ph.D. (Fall)</td>
<td>Prerequisites –P1 status. Introduces students to concepts in cell biology and pathophysiology that form a foundation for understanding mechanisms by which drugs act or intervene with disease processes. Knowledge gained from course sets a foundation for understanding disease development and progression in subsequent courses.</td>
</tr>
<tr>
<td>PHRD 5025</td>
<td>Applied Biological Chemistry</td>
<td>3.0 cr.</td>
<td>Krishna Mallela, Pharm.D. (Fall)</td>
<td>Prerequisites –P1 status. Course builds upon student knowledge of biochemistry to explore applications of biochemistry to diseases, drug actions and drug development. Knowledge gained from this course is used as a foundation for understanding the rationale for the therapeutical uses of drugs.</td>
</tr>
<tr>
<td>PHRD 5045</td>
<td>Pharmacy Law &amp; Regulatory Standards</td>
<td>3.0 cr.</td>
<td>Gina Moore, Pharm.D. (Fall)</td>
<td>Prerequisites –P1 status. Course introduces students to pharmacy laws and regulations. Students are able to carry out their intern duties in accordance with professional guidelines and regulatory standards. The course also explores how to apply ethical and professional principles in various healthcare settings.</td>
</tr>
<tr>
<td>PHRD 5055</td>
<td>Pharmacy Practice Fundamentals &amp; Drug Information</td>
<td>4.0 cr.</td>
<td>Randall Knutsen, Pharm.D. (Fall)</td>
<td>Prerequisites –P1 status. Course provides students with tactics necessary to perform dispensing duties in most pharmacy settings. Fundamentals of the practice of drug information are introduced. Pharmacy practice and drug information fundamentals are presented with context of history of pharmacy and contemporary pharmacy practice.</td>
</tr>
<tr>
<td>PHRD 5065</td>
<td>Patient-Centered Communication 1</td>
<td>3.0 cr.</td>
<td>Jennifer Trujillo, Pharm.D. (Fall)</td>
<td>Prerequisites –P1 status. During this two-course active learning series, students develop skills to communicate effectively with patients, caregivers and healthcare providers to facilitate optimal patient outcomes. These courses cover all aspects of professional communication, including gathering, organizing, conveying and documenting patient-related information.</td>
</tr>
<tr>
<td>PHRD 5075</td>
<td>Pharmacotherapy Self-Care 1</td>
<td>2.0 cr.</td>
<td>Sunny Linnebur, Pharm.D. (Fall)</td>
<td>Prerequisites –P1 status. Course prepares students to be able to 1) collect appropriate patient data to make an assessment for self-care (e.g. nonprescription products), 2) conduct a patient-centered assessment, and 3) design, implement, evaluate and adjust a patient-centered self-care plan.</td>
</tr>
<tr>
<td>PHRD 6005</td>
<td>Intro Professional Development &amp; Portfolio 3</td>
<td>1.0 cr.</td>
<td>Eric Gilliam, Pharm.D. (Fall)</td>
<td>Prerequisites – PHRD 5905 P2 status. This course encompasses students’ efforts in introductory pharmacy practice experiences and interprofessional training. A portfolio documents the students’ increasing proficiency in parallel with the curriculum.</td>
</tr>
<tr>
<td>PHRD 6015</td>
<td>Pharmacokinetics</td>
<td>3.0 cr.</td>
<td>Pete Anderson, Pharm.D. (Fall)</td>
<td>Prerequisites – P2 status. The influence of physiological and pathophysiological factors on drug levels is considered. Knowledge gained allows students to calculate appropriate dosing of drugs in patients and anticipate how drug doses should be adjusted in disease and the presence of other drugs.</td>
</tr>
</tbody>
</table>
PHRD 6065 Evidence-based Medicine & Literature Evaluation 3.0 cr. 
Rob Valuck, Ph.D. (Fall) Prerequisites – P2 status.
An introduction and step-wise approach to evidence-based medicine. Students understand commonly-used statistical tests and evaluate statistical results for statistical versus clinical significance. Students demonstrate by answering short drug information questions, presenting a journal club and writing a drug information paper.

PHRD 6085 Pharmacotherapy 2 5.0 cr.
Joseph Saseen, Pharm.D. (Fall) Prerequisites – PHRD 5985, P2 status.
This 7 course series includes pathophysiology, pharmacology, and therapeutics of a range of system based physiological conditions. Standards of care, controversial issues, pharmacotherapy advances, and patient management are covered. Areas covered in this course: nephrology, cardiology 1.

PHRD 6095 Pharmacotherapy 3 5.0 cr.
Laura Borgelt, Pharm.D. (Fall) Prerequisites – PHRD 5985, P2 status.
This 7 course series includes pathophysiology, pharmacology, and therapeutics of a range of system based physiological conditions. Standards of care, controversial issues, pharmacotherapy advances, and patient management are covered. Areas covered in this course: endocrinology, gynecology, urology.

PHRD 7005 Intro Professional Development & Portfolio 5 1.0 cr.
Wes, Nuffer, Pharm.D. (Fall) Prerequisites – PHRD 6905, P3 status.
This course encompasses students’ efforts in introductory pharmacy practice experiences and interprofessional training. A portfolio documents the students’ increasing proficiency in parallel with the curriculum.

PHRD 7015 Seminar Research 2 1.0 cr.
Kari Franson, Pharm.D., Ph.D. (Fall) Prerequisites – PHRD 6915, P3 status.
Students will apply their ability to retrieve, evaluate, and utilize professional information in a critical and scientific manner. Students independently determine how to best solve a pharmacy-related question using scientific principles, and present their findings to a large audience.

PHRD 7025 Pharmacogenomics 2.0 cr.
Chris Aquilante, Pharm.D. (Fall) Prerequisites – P3 status.
Course provides students with an understanding of how genetic factors influence drug efficacy. Knowledge gained from this course enhances students’ ability to select the most effective therapeutic intervention.

PHRD 7045 Public Health & Health Outcomes 2 3.0 cr.
Anne Libby, Ph.D. (Fall) Prerequisites – PHRD 6945, P3 status.
Course concepts are medication safety, drug usage, pharmacoconomics, and pharmacoepidemiology. Students analyze medication systems by using population data and risk management strategies, critically evaluate economic literature on a drug, and compare pharmacy and non-pharmacy treatments on economic and humanistic outcomes.

PHRD 7055 Pharmacy Management 2.0 cr.
Gina Moore, Pharm.D. (Fall) Prerequisites – P3 status.
The course provides an introduction to management in community pharmacy practice, hospital pharmacy management, and other business and management skills needed to be successful in a variety of different practice settings.

PHRD 7085 Pharmacotherapy 6 4.0 cr.
Ty Kiser, Pharm.D. (Fall) Prerequisites – PHRD 6985, PHRD 6995, P3 status.
This 7 course series includes pathophysiology, pharmacology, and therapeutics of a range of system based physiological conditions. Standards of care, controversial issues, pharmacotherapy advances, and patient management are covered. Areas covered in this course: infectious diseases 2.

PHRD 7095 Pharmacotherapy 7 4.0 cr.
Cindy O'Bryant, Pharm.D. (Fall) Prerequisites – PHRD 6985, PHRD 6995, P3 status.
This 7 course series includes pathophysiology, pharmacology, and therapeutics of a range of system based physiological conditions. Standards of care, controversial issues, pharmacotherapy advances, and patient management are covered. Areas covered in this course: hematology, oncology, rheumatology, transplantation.

PHRD 7801 Principles of Clinical Pharmacology (elective) 3.0 cr.
Peter Rice, Pharm.D., Ph.D. (Fall) P3 status
The course provides students with a foundational knowledge of clinical pharmacology, including pharmacokinetics, drug metabolism, assessment of drug effects, optimizing patient therapy and drug discovery & development. It is grounded in weekly topical lectures, supplemented by readings, discussion and assignments.

PHRD 7805 Honors Thesis Study Course 2.0 cr.
Robert MacLaren, Pharm.D. (Fall, Spring)
Students in the Honors Program may use this elective course to complete specific outcomes of their Honors project over 1-2 semesters. The student/mentor must complete the Approval and Proposal forms (found on SOP website) prior to enrolling.
<table>
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<th>Course</th>
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<th>Prerequisites/Description</th>
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<tbody>
<tr>
<td><strong>PHRD 7855 Independent Study Elective</strong></td>
<td>1.0-4.0 cr.</td>
<td>Per Department Chair approval</td>
</tr>
<tr>
<td><strong>PHRD 7856 Independent Study</strong></td>
<td>2.0 cr.</td>
<td>Per Department Chair approval</td>
</tr>
<tr>
<td><strong>PHRD 7895 Beginning Medical Spanish</strong></td>
<td>2.0 cr.</td>
<td>Placement exam. For pharmacy students only.</td>
</tr>
<tr>
<td><strong>PHRD 7896 Intermediate Medical Spanish</strong></td>
<td>2.0 cr.</td>
<td>Placement exam. For pharmacy students only.</td>
</tr>
<tr>
<td><strong>PHRD 8703 PharmD Clerkship III</strong></td>
<td>6.0 cr.</td>
<td>P4 status</td>
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<tr>
<td><strong>PHRD 8704 PharmD Clerkship IV</strong></td>
<td>6.0 cr.</td>
<td>P4 status</td>
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<tr>
<td><strong>PHRD 8705 PharmD Clerkship V</strong></td>
<td>6.0 cr.</td>
<td>P4 status</td>
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<tr>
<td><strong>SPRING SEMESTER</strong></td>
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<tr>
<td><strong>PHRD 5905 Intro Professional Development &amp; Portfolio</strong></td>
<td>1.0 cr.</td>
<td>P1 status, PHRD 5005. Students' introductory pharmacy practice experiences and interprofessional training. A portfolio documents students' increasing proficiency in parallel with the curriculum.</td>
</tr>
<tr>
<td><strong>PHRD 5915 Modern Drug Design &amp; Actions</strong></td>
<td>2.0 cr.</td>
<td>P1 status</td>
</tr>
<tr>
<td><strong>PHRD 5925 Pharmaceutics</strong></td>
<td>4.0 cr.</td>
<td>P1 status</td>
</tr>
<tr>
<td><strong>PHRD 5935 Pharmacology &amp; Toxicology</strong></td>
<td>2.0 cr.</td>
<td>P1 status</td>
</tr>
<tr>
<td><strong>PHRD 5965 Patient-Centered Communication</strong></td>
<td>3.0 cr.</td>
<td>P1 status</td>
</tr>
<tr>
<td><strong>PHRD 5975 Pharmacotherapy Self-Care</strong></td>
<td>2.0 cr.</td>
<td>P1 status</td>
</tr>
<tr>
<td><strong>PHRD 5985 Pharmacotherapy</strong></td>
<td>4.0 cr.</td>
<td>P1 status</td>
</tr>
</tbody>
</table>

Using the nervous systems as a model, the course introduces students to the mechanisms by which drugs produce therapeutic effects and side effects. The mechanisms of drug toxicity and how toxicity can be prevented and treated will be explored.

This course covers all aspects of professional communication, including gathering, organizing, conveying and documenting patient-related information.

During this two-course active learning series, students develop skills to communicate effectively with patients, caregivers and healthcare providers to facilitate optimal patient outcomes. These courses cover aspects of professional communication, including gathering, organizing, conveying and documenting patient-related information.
PHRD 6905 Intro Professional Development & Portfolio 4  1.0 cr.
Wes Nuffer, Pharm.D. (Spring) Prerequisites – PHRD 6005 P2 status.
This course encompasses students’ efforts in introductory pharmacy practice experiences and interprofessional training. A portfolio documents the students’ increasing proficiency in parallel with the curriculum.

PHRD 6915 Seminar Research 1  1.0 cr.
Kari Franson, Pharm.D., Ph.D. (Spring) Prerequisites – P2 status.
Students will apply their ability to retrieve, evaluate, and utilize professional information in a critical and scientific manner. Students independently determine how to best solve a pharmacy-related question using scientific principles, and present their findings to a large audience.

PHRD 6925 Medicinal Chemistry  2.0 cr.
Philip Reigan, Ph.D. (Spring) Prerequisites – P2 status.
This course is an application of medicinal chemistry concepts using clinically relevant case studies, designed to examine mechanism(s) of drug action and resistance, structure activity relationships, and other concepts related to the pharmacology and clinical use of modern drugs.

PHRD 6945 Public Health & Health Outcomes 1  3.0 cr.
Kavita Nair, Ph.D. (Spring) Prerequisites – P2 status.
Introduces students to health care delivery systems and discusses the social, political, economic factors that influence these systems. Students will link various medication use systems to their role in development and participation in health promotion, disease prevention, public health policy.

PHRD 6965 Clinical Reasoning & Decision Making  2.0 cr.
Sam Ellis, Pharm.D. (Spring) Prerequisites - P2 status.
Course prepares students to critically think through design, implementation, evaluation and adjustment of patient-centered pharmacy care plans. Students are presented principles of clinical practice guidelines, faculty modeling solving patient cases, and then small group discussion and debates on patient cases.

PHRD 6985 Pharmacotherapy 4   5.0 cr.
Doug Fish, Pharm.D. (Spring) Prerequisites – PHRD 6085, 6095, P2 status.
This 7 course series includes pathophysiology, pharmacology, and therapeutics of a range of system based physiological conditions. Standards of care, controversial issues, pharmacotherapy advances, and patient management are covered. Areas covered in this course: cardiology 2, infectious diseases 1.

PHRD 6995 Pharmacotherapy 5   4.0 cr.
Jacci Bainbridge, Pharm.D. (Spring) Prerequisites – PHRD 6085, 6095, P2 status.
Areas covered in this course: psychiatry, neurology.

PHRD 7905 Advanced IPPE         6.0 cr.
Wes Nuffer, Pharm.D. (Spring) Prerequisites – PHRD 7005, P3 status.
Students are placed in a 6-week, full-time (40 hours per week) patient care experience in which they can begin to apply their didactic knowledge. In this advanced IPPE students demonstrate competency to meet pre-APPE core performance domains and abilities.

PHRD 7965 Health Care Informatics        2.0 cr.
Various faculty, (Spring) Prerequisites – P3 status.
Provides content about informatics topics including a working understanding of knowledge systems for students to manage medication use systems to optimize patient and population outcomes. Students use tools to assess and address change, increase competitiveness, improve quality, optimize patient services.

PHRD 7995 Clinical Capstone        6.0 cr.
Joel Marrs, Pharm.D. (Spring) Prerequisites – PHRD 7905, P3 status.
Course is designed to be a capstone that integrates essential core pharmacy practice topics. The philosophy of this course is to facilitate student learning, and holding students accountable for prior learning in an integrated manner using complex patient scenarios.

PHRD 7802 Principles of Clinical Pharmacology 2 (elective)  3.0 cr.
Peter Rice, Pharm.D., Ph.D. (Spring) Prerequisite – PHRD 7801, P3 status
The course provides students with a foundational knowledge of clinical pharmacology, including pharmacokinetics, drug metabolism, assessment of drug effects, optimizing patient therapy and drug discovery & development. It is grounded in weekly topical lectures, supplemented by readings, discussion and assignments.

PHRD 7805 Honors Thesis Study Course  2.0 cr.
Robert MacLaren, Pharm.D. (Fall, Spring)
Students in the Honors Program may use this elective course to complete specific outcomes of their Honors project over 1-2 semesters. The student/mentor must complete the Approval and Proposal forms (found on SOP website) prior to enrolling.
PHRD 7845 Advanced Self Care (elective) 2.0 cr
Connie Valdez, Pharm.D. (Spring) Prerequisite – P3 status.
Students will augment their fundamental self-care knowledge, communications skills and ability to critically think through difficult and/or awkward situations, such as difficult patients or culturally sensitive issues related to self-care. They will be able to develop patient specific treatment plan.

PHRD 7850 Geriatric Pharmacy Elective 2.0 cr.
Sunny Linnebur, Pharm.D. (Spring) Prerequisite - P3 status.
This course is intended to provide the student with an advanced understanding of pharmacotherapy in older adults as well as common medical, psychological, and social issues encountered when caring for older adults.

PHRD 7855 Independent Study Elective 1.0-4.0 cr.
Doug Fish, Pharm.D./David Ross, Ph.D. (Fall, Spring) Per Department Chair approval

PHRD 7856 Independent Study 2.0 cr.
Various Faculty. (Fall, Spring) Per Department Chair approval

PHRD 7857 Compounding Pharmacy Elective 2.0 cr.
Peter Rice, Pharm.D., Ph.D. (Spring) Prerequisites – P2-P3 status.
An elective course to offer compounding skills for pharmacy students.

PHRD 7858 Managed Care Independent Study 2.0 cr.
Catherine Jarvis, Pharm.D. (Spring) Prerequisite – P3 status.
Study at Kaiser Permanente Colorado is to provide the student with various managed care pharmacy experiences, both didactic and experiential.

PHRD 7860 Special Topics in Complementary and Alternative Medicine (elective) 2.0 cr.
Monika Nuffer, Pharm.D. (Fall)
This course is designed to develop a broad knowledge base in the field of Complementary and Alternative Medicine (CAM). This course will cover common vitamins and minerals, herbal products, and bio-identical hormones, and core CAM domains and discussions of regulatory issues.

PHRD 7865 Film and Healthcare (elective) 2.0 cr.
Kari Franson, Pharm.D., Ph.D. (Spring)
This elective is designed to encourage pharmacy students to reflect upon the humanistic issues associated with health, disease and treatment through the lenses of film and literature.

PHRD 7870 Pediatric Pharmacy Practice (elective) 2.0 cr.
Sarah Anderson, Pharm.D. (Spring) Prerequisite – P3 status.
This course will be offered to students interested in developing and fostering their knowledge and assessment of childhood diseases and pharmacotherapy. Clinical pharmacy specialists and staff from the Children’s Hospital of Denver will teach this course.

PHRD 7880 Women's Health Elective 2.0 cr.
Laura Borgelt, Pharm.D. (Spring) Prerequisite – P2-P3 status.
This course will address the clinical, social, economic, and ethical aspects of women’s health care.

PHRD 7885 Acute Care Pharmacotherapy (elective) 2.0 cr.
Ty Kiser, Pharm.D. (Spring) Prerequisite – P3 status.
Pharmacology and appropriate clinical use of agents used in the treatment of selected acute disorders found in hospitalized patients. The course will also focus on the comprehensive nature of these acute disorders. Recent advances in pharmacotherapy, patient-specific management strategies, and controversial issues will be included and emphasized.

PHRD 7890 Advanced Oncology Pharmacy (elective course) 2.0 cr.
Cindy O’Bryant, Pharm.D. (Spring) – P3 status.
This course will expand upon/add to the oncology knowledge learned in PHRD 6750. Students will learn pathophysiology and treatment of solid organ and hematologic malignancies, practical use of antineoplastic agents, and provision of supportive care for patients of cancer.

PHRD 7895 Beginning Medical Spanish (elective) 2.0 cr.
Connie Valdez, Pharm.D. (Spring) Prerequisite: Placement exam
This beginning medical Spanish course, tailored for pharmacy students, is designed to allow students to become comfortable with conversational Spanish and medical vocabulary in various pharmaceutical contexts. Language learning is both academic and experiential.

PHRD 7896 Intermediate Medical Spanish (elective) 2.0 cr.
Connie Valdez, Pharm.D. (Spring) Prerequisite: Placement exam
This intermediate medical Spanish course, tailored for pharmacy students, is designed to allow students to become comfortable with intermediate conversational Spanish and medical vocabulary in various pharmaceutical contexts. Language learning is both academic and experiential.
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<thead>
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<tbody>
<tr>
<td><strong>PHRD 8100 Drug Information Portfolio</strong></td>
<td>2.0 cr.</td>
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<tr>
<td>Hilda Ndikum, Pharm.D. (Spring) Prerequisite – P4 status.</td>
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<tr>
<td>This experiential drug information component of the curriculum is conducted through a longitudinal approach during the clerkship year. Each student will be responsible to develop a portfolio documenting his/her drug information-related activities while on various rotations.</td>
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<tr>
<td><strong>PHRD 8706 PharmD Clerkship VI</strong></td>
<td>6.0 cr.</td>
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<tr>
<td>Wes Nuffer, Pharm.D. (Spring) Prerequisite – P4 status.</td>
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<tr>
<td><strong>PHRD 8707 PharmD Clerkship VII</strong></td>
<td>6.0 cr.</td>
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<tr>
<td>Wes Nuffer, Pharm.D. (Spring) Prerequisite – P4 status.</td>
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<tr>
<td><strong>PHRD 8708 PharmD Clerkship VIII</strong></td>
<td>6.0 cr.</td>
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<tr>
<td>Wes Nuffer, Pharm.D. (Spring) Prerequisite – P4 status.</td>
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<tr>
<td><strong>SUMMER SEMESTER</strong></td>
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<tr>
<td><strong>PHSC 3030 Introduction to Pharmaceutical Sciences</strong></td>
<td>6.0 cr.</td>
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<tr>
<td>B. Brunson. Prerequisites - Instructor approval. (Course is for incoming first year students who need prep work.)</td>
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<tr>
<td>Comprehensive course that consists of Biochemistry, Physiology, Pharmaceutics, and preceptor experience. Course is designed to integrate learning skills, problem solving and critical thinking skills with course content and offer students a preview into the diverse options available in pharmacy practice.</td>
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<tr>
<td><strong>PHRD 8701 PharmD Clerkship I</strong></td>
<td>6.0 cr.</td>
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<tr>
<td>Wes Nuffer, Pharm.D (Summer) Prerequisite – P4 status.</td>
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<tr>
<td><strong>PHRD 8702 PharmD Clerkship II</strong></td>
<td>6.0 cr.</td>
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<tr>
<td>Wes Nuffer, Pharm.D (Summer) Prerequisite – P4 status.</td>
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