

PharmD Course Overview

Year 1 Courses

Courses over Terms 1 & 2	Topics Covered
PHAR 188.2 Experiential Learning 1	Students will actively observe and gain pharmacy exposure and experience in various health care settings and practice sites such as at a community pharmacy and medSask.
PHAR 189. 2 Service Learning	Students will complete service-learning in a community-based organization to gain an appreciation of what care means to others and the barriers they experience in receiving care. These interactions and activities will provide students with an opportunity to develop and practice skills including verbal and non-verbal communication, listening, empathy, and professionalism. Students will engage in written and verbal reflection of these experiences.
PHAR 193.0 Capstone Year 1	This course consists of a capstone (comprehensive) exam at the conclusion of Year 1 of the PharmD program to formatively assess the competencies across all courses in year 1.
Term 1 Courses	Topics Covered
PHAR 190.0 Introduction to Year 1	Orientation to Year 1 of the PharmD Program
PHAR 110.3 Introduction to Pharmacy and the Health Care System	Canadian health care system, determinants of health, public health, communication, cultural competency, patient behaviors, professionalism
PHAR 121.3 Foundational Sciences 1: Foundational Pathophysiology & Pharmacology	ADME principles, pharmacological concepts, pharmacodynamics principles, drug classes; intro to immune function, inflammation, nervous system, cardiovascular system, renal system, endocrine system.
PHAR 122.3 Foundational Sciences 2: Medicinal Chemistry and Physical Pharmacy	Drug discovery process, functional groups, structural changes in drug classes, drug binding interactions, stereochemistry of drugs, structure/activity relationships, drug design, stability, activity, toxicity, degradation, formulation
PHAR 153.4 Self-Care 1: Non-prescription Pharmaceuticals and Supplies	Vitamins/minerals, cough/cold, allergic rhinitis, fever, pediculosis, infectious skin diseases, dandruff, seborrhea, itch, diaper rash, eczema, colic, OTC weight loss, sun health, hair loss, acne, fungal dermatitis, dry skin, vaginitis, first aid, contact dermatitis, hives, pityriasis
PHAR 162.3 Pharmacy Practice 1: The Patient Care Process	Patient care process: patient assessment, physical assessment, interviewing, patient counselling, identifying drug therapy problems, care plans, documentation
PHAR 170.3 Pharmacy Skills Development	Utilizing the Kroll computer system in lab; technical functions of dispensing, including: data entry for new prescriptions, refills, transfers, logs; use of the Saskatchewan Formulary (interchangeability, maintenance drug list, EDS process); patient care process (basic prescription counselling and self-care scenarios); patient interviews; prescription reviews (identifying basic drug therapy problems or dispensing data entry errors); pharmaceutical care; references (Lexicomp, RxFiles, CPS)

PHAR 191.1 IPE Activities	Students will participate in problem-based learning tutorials, case studies, and other Interprofessional activities with students from other health science colleges. These activities are structured around the six competency domains required for Interprofessional collaboration: 1) Interprofessional communication; 2) patient/client/family/community-centred care; 3) role clarification; 4) team functioning 5) collaborative leadership and 6) Interprofessional conflict resolution.
Term 2 Courses	Topics Covered
PHAR 111.1 Foundations for Practice: Pharmacy Mathematics & Calculations	Dosage calculations; calculations for pharmaceutical preparations
PHAR 112.1 Pharmacy Law	Legal obligations and laws within provincial and federal frameworks
PHAR 123.3 Foundational Sciences 3: Foundational Pathophysiology & Pharmacology 2	Topics continue from term 1
PHAR 124.3 Foundational Sciences 4: Introduction to Pharmaceutics	Students will learn to describe and explain pharmaceutical dosage forms (powders, capsules, solutions, colloids, suspensions, emulsions, tablets. Note: students have not completed dermatology compounds), devices, and designs, explain principles of extemporaneous compounding, and will differentiate physiochemical properties of pharmaceutical formulations. Students will apply knowledge gained to select and explain various dosage forms for clinical situations and integrate concepts from foundational sciences courses.
PHAR 152.6 Pharmacotherapeutics 1	Infectious diseases (organisms, antibiotics, selection of antibiotics for patients, resistance, influenza, COVID-19, otitis media, cellulitis, pharyngitis, sinusitis, pneumonia, UTI); cardiovascular (hypertension, lipids, dyslipidemia, coronary heart disease, stroke, antiplatelet therapy); diabetes; obesity
PHAR 154.3 Self-Care 2: Non-prescription Pharmaceuticals and Supplies	Psoriasis, childhood dermatitis, chicken pox, shingles, foot care, hemorrhoids, back pain, physiotherapy aids, OTC NSAIDS, braces, herbals, leg cramps, constipation, diarrhea, IBS, nausea, vomiting, pregnancy tests, ophthalmic, otic
PHAR 171.3 Pharmacy Skills Development 2	As per PHAR 170, but with more complex scenarios; Introduction to compounding: capsules, oral solutions, oral suspensions
PHAR 192.1 IPE Activities	Continuation from Term 1
Spring/Summer	
PHAR 185.4 Introductory Pharmacy Practice Experience (IPPE) Community	This experiential learning course occurs after completion of first year and before second year in the program for a duration of 4 weeks (160 hours). Students will begin to participate in direct patient care activities under the supervision of a qualified preceptor and will apply knowledge and skills learned in year 1 courses.

Year 2 Courses

Courses over Terms 1 & 2	Topics Covered
PHAR 288.2 Experiential Learning 2	Building on knowledge and skills gained in first year courses and experiential learning placements, students will continue to acquire pharmacy experience and demonstrate skills applicable in the hospital setting. Students will practice self-study and reflection of their experience.
PHAR 293.0 Capstone Year 2	This course consists of a capstone (comprehensive) exam at the conclusion of Year 2 of the PharmD program to formatively assess the competencies across all courses in year 2.
Term 1 Courses	Topics Covered
PHAR 290.0 Introduction to Year 2	Orientation to Year 2 of the PharmD
PHAR 224.3 Science of Pharmacotherapy 1: Pharmaceutics and Pharmaceutical Biotechnology	Biopharmaceutic principles and Biopharmaceutical products; Pharmaceutics: Emulsions, suppositories, topicals, injectables, devices; Nanotechnology, novel delivery, sterile products, blood products Pharmaceutical Biotechnology: Basic molecular and genetic mechanisms (DNA, Genome); recombinant technology, production of biotech drugs, genetic engineering, formulations, pharmacist's role, routes of delivery, clinical uses, gene-therapy, bioinformatics
PHAR 226.3 Foundational Sciences 5: Pharmacokinetics	Students will explain foundational pharmacokinetic principles governing the absorption, distribution, metabolism, and excretion of drugs. Students will understand the influence of routes of administration, dose regimen and therapeutic window on therapeutic outcomes. Students will interpret pharmacokinetic concepts and apply principles taught to illustrate solutions and resolution to clinical cases and therapeutic problems.
PHAR 253.6 Pharmacotherapeutics 2	Contraception, sexually transmitted infections, smoking cessation, steroids, asthma/COPD, EBM, heart failure, DVT/PE, arrhythmias, insomnia, psychiatry intro, depression, anemia
PHAR 262.1 Pharmacy Practice 2	Best possible medication history (BPMH) and admission medication reconciliation (AMR), hospital orders and documentation, presenting/handling off a patient, medication errors, communication challenges
PHAR 271.3 Evidence Based Medicine	Journal clubs, epidemiology, critical appraisal, formatting research questions, critical evaluation of evidence for therapy, principles in experimental and non-experimental research designs in pharmacy, skills in research methods, statistics and ethics applied in pharmacotherapy, principles of scientific inquiry and critical thinking in practice-based research, research methods and evidence-based practice, pharmacy resources, informatics; select, retrieve, assess, and apply information; differentiate and critique types of studies/clinical trials
PHAR 272.3 Pharmacy Skills Development 3	Simulated practice environment (skills lab); dispensing of medications, products, extemporaneously compounded products; patient interviewing, medication history acquisition, counselling & education, documentation, medication reconciliation, assess a patient's health and medication status, screen patients for relevant services, interpretation of laboratory and other tests, application of legal and ethical principles, care plans, monitoring and follow ups

PHAR 291.1 IPE Activities	Students will participate in problem-based learning tutorials, case studies, and other Interprofessional activities with students from other health science colleges. These activities are structured around the six competency domains required for Interprofessional collaboration: 1) Interprofessional communication; 2) patient/client/family/community-centred care; 3) role clarification; 4) team functioning 5) collaborative leadership and 6) Interprofessional conflict resolution.
Term 2 Courses	Topics Covered
PHAR 212.1 Pharmacy Ethics	Pharmacy graduates are committed to apply best practices and adhere to high ethical standards in the delivery of pharmacy care. Through this course, students understand what makes up ethical behavior, how to use ethical frameworks as one component of professional judgement and to recognize and respond to situations presenting ethical dilemmas
PHAR 213.3 Management 1	Management principles; strategic analysis and decision-making; human resources and organizational behaviour; general marketing concepts; services marketing; strategic communications; ethical management considerations; financial aspects of pharmacy practice; innovation; branding; advocacy; role of managers; stakeholder analysis, environmental analysis (e.g. SWOT, Porter's 5 Forces, etc.); pharmacy ownership types; organizational structure; intellectual capital; knowledge management; employee recruitment and retention; stress and conflict; organized labour and unions; motivation; business planning
PHAR 225.3 Science of Pharmacotherapy 2: Clinical Applications	Clinical Pharmacokinetics (BSA, CLCreatinine, IBW)/therapeutic drug monitoring, drug dosing in organ dysfunction, drug interactions, pharmacogenomics/personalized medicine, bioequivalence (including testing of generic drugs), science of complex therapeutic problems, problem solving modules with the foundational science explained
PHAR 255.6 Pharmacotherapeutics 3	Kidney and renal diseases, PUD, GERD, acute GI bleed, Liver disease, IBD, Musculoskeletal diseases (rheumatoid arthritis, osteoarthritis, gout), Acute and chronic pain/ opioid and non-opioids, rationale prescribing of opioids, headache, migraine, thyroid, infectious diseases (endocarditis, meningitis, TB, antimicrobial stewardship)
PHAR 263.1 Pharmacy Practice 3	Shared decision-making, motivational interviewing, chronic disease education, adverse drug reaction reporting, discharge medication reconciliation, introduction to sterile preparations, IV compatibilities
PHAR 273.3 Pharmacy Skills Development 4	Simulated practice environment (skill lab); actively participate in distribution/dispensing of medications/products; practice in alternative/diverse practice settings including an introduction to practice in a hospital setting; perform and document a comprehensive patient assessment to identify, resolve and prevent drug therapy problems; assess a patient's health and medication status and drug therapy needs; screen for services; counselling and education on medication and devices; determine efficacy and safety endpoints for monitoring therapy; follow-up and monitoring; legal implications and ethics in dispensing and drug therapy
PHAR 292.1 IPE Activities	Continuation from Term 1

Electives	Topics Covered
PHAR 221.1 Radiopharmacy	Personalized and precision medicine employs molecular imaging for patient diagnosis and prognosis. Radiopharmaceuticals enable molecular imaging. Radiopharmacies and radiopharmaceutical companies manufacture radiopharmaceuticals and supply them to hospitals. In addition, several important radiopharmaceuticals including recently approved ones are used in therapy of cancer, thyroid diseases, and other conditions.
PHAR 210.3 Pharmaceutical Biotechnology	This course will provide a more in-depth look at biotechnology. It will emphasize biotechnology application to pharmacy and pharmaceutical sciences. The pharmacist's role with biotechnology drugs will be discussed. The techniques involved in the production, development and evaluation of biotechnology products will also be discussed. In addition, new biotechnology related techniques, gene therapy, RNA therapeutics, immunotherapeutic & pharmacogenomics and genotyped prescribing will be topics of discussion. Examples of application to pharmacotherapy in specific disease states will be covered.
PHAR 211.3 Personalized Medicine	With recent advances in 'omics' studies, personalized medicine has become a rapidly growing area in health science. However, it also faces big challenges in clinical practice, such as therapeutic efficacy, patient privacy and cost. In this course, we are going to discuss the basic concepts and progress of personalized medicine, the 'omics', biomarker identification, the major challenges for personalized medicine, personalized medicine tests, and examples of personalized medicine practice in cancer, cardiovascular disorder, immune disorder, psychiatry and analgesics/opiates.
PHAR 220.3 Drug Discovery and Development	Students will learn the processes of drug discovery and development from initial identification of a drug-like molecule; in vitro and in vivo pharmacodynamic and pharmacokinetic evaluation; pre-clinical assessment; and clinical trial design and considerations. Students will learn about intellectual property protection for new chemical entities as part of the drug development process and gain an understanding of the role pharmacist's play in clinical trials for drug development. Learning will utilize real-world data and primary literature. Using knowledge from previous foundational sciences courses, students will learn integrate knowledge to assess and critique data, information, and pharmacological principles.
Spring/Summer	
PHAR 285.4 Introductory Pharmacy Practice Experience (IPPE) Hospital	This experiential learning course occurs after completion of second year and before third year in the program for a duration of 4 weeks (160 hours). Students will begin to participate in direct patient care activities under the supervision of a qualified preceptor. Students will continue to apply and acquire new knowledge, professional and patient care skills learned in previous experiential learning placements and courses in the program.

Year 3 Courses

Courses over Terms 1 & 2	Topics Covered
PHAR 388.2 Experiential Learning 3	Building on knowledge and skills gained in previous courses and experiential learning placements, students will have the opportunity to continue acquiring applied pharmacy experiences. Students will practice self-study and reflection of their experience, showing increasing ability to think critically and set goals as they monitor their own performance and progress.
Term 1 Courses	Topics Covered
PHAR 390.0 Introduction to Year 3	Orientation to Year 3 of the PharmD
PHAR 324.3 Science of Pharmacotherapy 3: Toxicology	Students will recognize the links between foundational sciences and real-world evidence to explain how basic principles can be used to improve clinical therapy. Students will interpret basic toxicology problems in practice, drug development, and in medical research. Students will employ problem-solving skills with scientific principles, while taking patient concerns into consideration to find solutions to therapeutic problems. Students will make decisions related to drug therapy using foundational scientific knowledge. Special topics of focus include toxicology, drug formulation considerations, cannabis, and pharmacokinetics in pediatric and geriatric populations.
PHAR 350.3 Pharmacotherapy in Older Adults	Students will integrate learning on geriatric-specific issues with previous pharmacotherapeutics knowledge to develop the necessary skills to provide pharmaceutical care to older adults. Topics to be discussed include the pathophysiology of aging; approach to comprehensive geriatric assessment; geriatric syndromes such as falls, cognitive impairment, polypharmacy, and frailty, and the impact of medications on each; as well as unique considerations regarding the management of common medical conditions in older adults, including hypertension, diabetes, cardiovascular disease, COPD, pain, anxiety, and depression. Students will also be introduced to concepts relevant to palliative and end-of-life care. Students will be expected to develop and demonstrate competence in optimizing drug therapy for older adults with multiple medications and medical issues.
PHAR 358.6 Pharmacotherapeutics 5	Psych (bipolar, psychosis, eating disorders, ADHD, anxiety), Parkinson's disease, seizures, multiple sclerosis, substance use disorder, transplant and immunizations.
PHAR 367.1 Pharmacy Practice 5	Students will integrate concepts learned to date with the patient care process practiced and applied in the pharmacy practice skills lab. Students will apply and demonstrate skills, behaviors, and issues relevant to contemporary pharmacy practice. Students will practice professional communication, advocacy, management, mentorship, collaboration, self-directed learning, critical thinking, problem solving, drug information gathering, medication administration, use of information technology, and physical assessment skills. Students will demonstrate attitudes and practice behaviors that will guide their professional development and practice.
PHAR 374.3 Pharmacy Skills Development 5	In a simulated practice environment, students will practice and apply essential skills and methods of the patient care process incorporating patient concerns and topics including social behavioral, pharmacotherapeutic and pharmacoscience content covered in the didactic portion of the curriculum in complex patients with complex problems. Students will practice and apply drug information skills, counselling and education on medication and devices, prescription processing and checking skills, physical assessment skills, and use of information technology.

PHAR 395.3 Disease State Management Review and Update	This course allows students to review and synthesize knowledge and skills learned previously in the program and to present information. Students will use knowledge of advanced pharmacotherapy to determine management of complex clinical cases involving a variety of patients.
PHAR 391.1 IPE Activities	Students will participate in problem-based learning tutorials, case studies, and other Interprofessional activities with students from other health science colleges. These activities are structured around the six competency domains required for Interprofessional collaboration: 1) Interprofessional communication; 2) patient/client/family/community-centred care; 3) role clarification; 4) team functioning 5) collaborative leadership and 6) Interprofessional conflict resolution.
Term 2 Courses	Topics Covered
PHAR 315.3 Issues in Health Care and Pharmacy Practice	Students will critique current pharmacy and health care related issues and extend analysis and debate on topics relevant to their future role as health care practitioners. Students will compare and contrast key points of contention or controversy on selected topics and explain and argue for a point of view. Students will discuss evaluation and improvement of health care and pharmacy practice. Students will model culturally respectful communication in multiple forms and will articulate a personal philosophy for leadership and professionalism in pharmacy practice.
PHAR 359.6 Pharmacotherapeutics 6	Dysmenorrhea, PMS, endometriosis, menopause, infertility, erectile dysfunction, testosterone replacement therapy, transgender medicine, BPH, glaucoma, urinary retention, dementia, long term care, drugs in pregnancy and lactation, cystic fibrosis, pediatric principles, HIV, drugs in obesity, TPN, acid base , fluid and electrolytes, oncology, pediatric seizures, pediatric to adult transition to care.
PHAR 368.1 Pharmacy Practice 6	Preventing drug diversion and forgeries, review of the Prescription Review Program, burnout, communication in geriatrics and pediatrics, walking aids and braces, adherence, review of empathetic communication, lifelong learning
PHAR 375.3 Pharmacy Skills Development 6	In a simulated practice environment students will extend the skills and methods of the patient care process to complex cases. Students will adapt their drug information gathering skills, prescription processing and checking skills, medication administration, and physical assessment skills in order to assess and respond to cases involving complex disease states and complex patient concerns. Students will practice and apply cumulative skills.
PHAR 391.1 IPE Activities	Continuation from Term 1
Electives	Topics Covered
PHAR 314.3 Leadership	Building on the foundation of PHAR 213 (Management), this course introduces students to aspects of leadership (formal and informal) and leadership theory, with emphasis on effective leadership as a pharmacist. Students will explore the qualities, behaviours, and practices of effective leaders. This course takes a hands-on, pragmatic approach with assessment methods so that students can tangibly relate to and apply course concepts.
PHAR 332 Directed Research	The student will complete a research project under the supervision of a faculty member.
PHAR 370.3 Complex Cases 1 Term 1	This course allows students the opportunity to work through complex therapeutic problems in a case-based format. Generally patient cases will focus on one or two main therapeutic problems that are complicated by comorbid conditions and/or lack of response.

PHAR 371.3 Complex Cases 2 Term 2	This course provides students with the opportunity to use their knowledge of advanced pharmacotherapy to determine how to approach and manage complex clinical cases involving patients in both ambulatory and acute care settings. Active participation is a critical element in this intensive course.
PHAR 398.3 Applied Pharmacotherapy in Older Adults	This course will give students with a special interest in geriatrics the opportunity to apply foundational pharmacotherapeutic knowledge to older adult care using a case-based approach. Students will build on concepts introduced in the core curriculum to address the needs of complex older adult care seen in specialty care settings, such as rehabilitation and palliative care units and long-term care homes. Topics that will be covered include Parkinson's disease, dementias and responsive behaviours, frailty, falls and palliative/end-of-life care. Students will gain practice and be expected to demonstrate competence in managing medications in older adults with multiple medical comorbidities and polypharmacy.
PHAR 398.3 Natural Health Products	This course will introduce students to natural health products commonly found in community pharmacies and those frequently used by the public for both minor ailments and for common disorders. Students will learn about the current Health Canada approval process for natural health products, pharmacology and toxicology of herbals, nutritional supplements, and vitamins, and about the role of natural health care practitioners. They will also consider why patients use nontraditional therapeutics in the context of modern medical therapy. Emphasis will be placed on sourcing and using reliable drug information about natural health products, for the purpose of developing professional skills in counseling patients and in evaluating drug interactions.
PHAR 398.3 Special Topics	Additional offerings may include: • Advanced Minor Ailment Management • Geriatrics

Year 4 Courses

Courses over Summer, Terms 1 & 2	Topics Covered
PHAR 490.0 Introduction to Year 4	Introduction to year 4 of the PharmD
PHAR 481.8 Advanced Pharmacy Practice Experience (APPE) 1: Hospital	This advanced pharmacy practice experience occurs during the final year in the program for a duration of 8 weeks (320 hours). Students participate in direct patient care activities in an acute care clinical setting under the supervision of a qualified preceptor. Students are expected to contribute meaningfully, productively, and safely to direct patient care.
PHAR 482.8 Advanced Pharmacy Practice Experience (APPE) 2: Community	This advanced pharmacy practice experience occurs during the final year in the program for a duration of 8 weeks (320 hours). Students participate in direct patient care activities and services in a community pharmacy clinical setting located in Saskatchewan under the supervision of a qualified preceptor. Students are expected to contribute meaningfully, productively, and safely to direct patient care.
PHAR 483.8 Advanced Pharmacy Practice Experience (APPE) 3: Other Direct Patient Care	This advanced pharmacy practice experience occurs during the final year in the program for a duration of 8 weeks (320 hours). Students are provided with the opportunity to engage in a wide variety of direct patient care activities and services at various practice settings. Settings may include but are not limited to hospital, community, ambulatory care, primary care, virtual care, and specialty sites. These settings allow students to acquire practice experiences in and develop clinical skills necessary to provide care to a variety of patients including but not limited to acute care, infectious diseases, mental health, long-term or personal care home settings in urban, rural, remote, and marginalized communities, and in patients in transition between care sectors or service locations. Students will provide direct patient care and participate in a variety of direct patient care activities under the supervision of a qualified preceptor. Students are expected to contribute meaningfully, productively, and safely to direct patient care.
PHAR 484.8 Advanced Pharmacy Practice Experience (APPE) 4: Elective Practice	This advanced pharmacy practice experience occurs during the final year in the program for a duration of 8 weeks (320 hours). Students are provided with the opportunity to engage in a wide variety of either direct patient care activities and services at various practice settings (as outlined in the 483 course) or non-direct patient care settings such as research, professional association, advocacy, administration, management, drug information, industry, or projects under the supervision of a qualified preceptor.
PHAR 493.0 Capstone Year 4	This course consists of a capstone (comprehensive) exam at the conclusion of Year 4 of the PharmD program to formatively assess the competencies across all four years of the program.