

## Washington State University Doctor of Pharmacy Degree Program

### Curriculum Outcomes

(Approved June 2016)

Washington State University College of Pharmacy (COP) PharmD Curriculum Outcomes are Standards 1, 2, 3, and 4 of the Accreditation Council for Pharmacy Education (ACPE) Standards 2016. The complete ACPE Standards 2016 are available at the following link. <https://www.acpe-accredit.org/deans/standards.asp>. Curriculum committee assigns PharmD Curriculum Outcomes to each required course in the curriculum.

#### PharmD Curriculum Outcomes:

Upon graduation from the Doctor of Pharmacy program, all graduates will demonstrate competency in the following outcomes:

**Standard 1: Foundational Knowledge\***: The graduate is able to develop, integrate, and apply knowledge from the foundational sciences (i.e., biomedical, pharmaceutical, social/behavioral/administrative, and clinical sciences) to evaluate the scientific literature, explain drug action, solve therapeutic problems, and advance population health and patient-centered care.

#### Standard 2: Essentials for Practice and Care

**2.A. Patient-centered care** – The graduate is able to provide patient-centered care as the medication expert (collect and interpret evidence, prioritize, formulate assessments and recommendations, implement, monitor and adjust plans, and document activities).

**2.B. Medication use systems management** – The graduate is able to manage patient healthcare needs using human, financial, technological, and physical resources to optimize the safety and efficacy of medication use systems.

**2.C. Health and wellness** – The graduate is able to design prevention, intervention, and educational strategies for individuals and communities to manage chronic disease and improve health and wellness.

**2.D. Population-based care** – The graduate is able to describe how population-based care influences patient-centered care and the development of practice guidelines and evidence-based best practices.

**Standard 3: Approach to Practice and Care**

**3.A. Problem solving** – The graduate is able to identify problems; explore and prioritize potential strategies; and design, implement, and evaluate a viable solution.

**3.B. Education** – The graduate is able to educate all audiences by determining the most effective and enduring ways to impart information and assess learning.

**3.C. Patient advocacy** – The graduate is able to represent the patient’s best interests.

**3.D. Interprofessional collaboration** – The graduate is able to actively participate and engage as a healthcare team member by demonstrating mutual respect, understanding, and values to meet patient care needs.

**3.E. Cultural sensitivity** – The graduate is able to recognize social determinants of health to diminish disparities and inequities in access to quality care.

**3.F. Communication** – The graduate is able to effectively communicate verbally and nonverbally when interacting with individuals, groups, and organizations.

**Standard 4: Personal and Professional Development**

**4.A. Self-awareness** – The graduate is able to examine and reflect on personal knowledge, skills, abilities, beliefs, biases, motivation, and emotions that could enhance or limit personal and professional growth.

**4.B. Leadership** – The graduate is able to demonstrate responsibility for creating and achieving shared goals, regardless of position.

**4.C. Innovation and entrepreneurship** – The graduate is able to engage in innovative activities by using creative thinking to envision better ways of accomplishing professional goals.

**4.D. Professionalism** – The graduate is able to exhibit behaviors and values that are consistent with the trust given to the profession by patients, other healthcare providers, and society.

\*Standard 1 – Foundational Knowledge is further defined by PharmD Course Level Outcomes.

### PharmD Course-level Outcomes

To meet ACPE Standard 1 and Appendix 1, the following College of Pharmacy PharmD Course-level Outcomes were developed and approved by the faculty. The Course-level Outcomes have been mapped to Appendix 1 and are categorized into curriculum areas including communication (COM), drug information and literature evaluation (DILE), pharmacology (PC), pharmacokinetics (PK), pharmacy law (PL), professionalism (PROF), pharmaceutical sciences (PS), pharmacotherapy (PT), patient care process (PtCP), patient safety (PtS), and social/administration sciences (SAS).

Curriculum committee assigns Course-level Outcomes to each required course in the PharmD program.

<b>PharmD Course-level Outcomes</b>	<b>Curriculum Area or Category Overview (not by course)</b>	<b>Examsoft ID</b>
Articulate written or verbal professional recommendations succinctly.	Communication	COM01
Demonstrate interprofessional written and verbal skills to improve patient safety.	Communication	COM02
Demonstrate professional communication imparting appropriate information including realistic counseling techniques, peer and interprofessional communication.	Communication	COM03
Describe and integrate the impact of cultural values, beliefs and practices and social determinants of health on patient care outcomes and professional communication.	Communication	COM04
Utilize principles of effective communication and patient counseling skills to provide information that empowers patients to effectively manage their health.	Communication	COM05
Describe fundamentals of research design, methodology and evaluation.	Drug Information and Literature Eval	DILE01
Evaluate and interpret primary scientific literature, determine its quality, and judge its relevance and practical implication.	Drug Information and Literature Eval	DILE02
Evaluate and use appropriate information resources to provide evidence based drug information answers and patient centered care.	Drug Information and Literature Eval	DILE03
Recognize and integrate economic principles with concepts of pharmacoeconomic analysis and their application.	Drug Information and Literature Eval	DILE04
Summarize the principles of formulary management.	Drug Information and Literature Eval	DILE05
Understand basic statistical principles/tests for analyzing and interpreting data.	Drug Information and Literature Eval	DILE06
Delineate the pharmacologic activity, mechanism of action, and therapeutic use and tolerability of drugs and drug classes.	Pharmacology	PC01
Describe the anatomy, physiology, and pathophysiology of the human body.	Pharmacology	PC02
Understand the immune response and how drugs affect the immune system.	Pharmacology	PC03

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Recognize pharmacophores and relate the chemical structure of drugs to pharmacologic activity and metabolic fate.	Pharmacology	PC04
Recognize the potential for adverse effects and explain the mechanism of toxicity for major drugs and drug classes.	Pharmacology	PC05
Describe the physiologic and biochemical processes that determine the time course of drug disposition and action.	Pharmacokinetics	PK01
Develop and revise a pharmacokinetic dosing regimen and monitoring plan for an individual patient.	Pharmacokinetics	PK02
Explain the principles and parameters of clinical pharmacokinetic management of medications for patient care.	Pharmacokinetics	PK03
Apply knowledge of Washington state Revised Code of Washington(s) and Washington Administrative Code(s) as related to the practice of pharmacy.	Pharmacy Law	PL01
Compare and contrast the regulation requirements of the various pharmacy practice settings in Washington state.	Pharmacy Law	PL02
Describe the requirements of becoming a licensee and maintaining a license as a health care professional in the state of Washington.	Pharmacy Law	PL03
Understand and apply the federal and state legal systems and how they affect the practice of pharmacy.	Pharmacy Law	PL04
Develop and model professional behavior through demonstration of professional work habits, priorities, time management and positive interactions.	Professionalism	PROF01
Accurately and safely compound non-sterile and sterile preparations.	Pharm Sci	PS01
Calculate the amounts of drugs and excipients needed for compounded preparations and report/apply answer(s) in a clinically appropriate manner.	Pharm Sci	PS02
Describe strategies used by pharmaceutical and biotechnology companies to choose a therapeutic target.	Pharm Sci	PS03
Describe the human testing stage of the drug development process.	Pharm Sci	PS04
Describe the principles of drug delivery and the ideal characteristics of dosage forms for the following routes of administration: oral, sublingual, buccal, rectal, vaginal, nasal, ophthalmic, parenteral, topical, transdermal, and respiratory.	Pharm Sci	PS05
Describe the role and function of excipients in different types of dosage forms.	Pharm Sci	PS06
Determine appropriate beyond-use dates.	Pharm Sci	PS07
Discuss the potential physical and/or psychosocial benefits compared to the limitations and risks of using genomic/pharmacogenomics tests related to predisposition of disease.	Pharm Sci	PS08
Examine the influence of ethnic/racial background in genetic polymorphisms and associations with drug response.	Pharm Sci	PS09
Explain and apply the concepts of pharmaceutical equivalence, bioequivalence, and therapeutic equivalence including use of the Orange Book.	Pharm Sci	PS10

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Identify drug and disease associated genetic variations that facilitate development of prevention, diagnostic and treatment strategies.	Pharm Sci	PS11
Identify strategies to predict and prevent incompatibilities in parenteral dosage forms.	Pharm Sci	PS12
Interpret factors that affect chemical, physical, and microbiological stability of drugs and dosage forms.	Pharm Sci	PS13
Interpret how the physiochemical properties of a drug influences its solubility, permeability, and absorption.	Pharm Sci	PS14
Measure the correct quantities of active and inactive pharmaceutical ingredients.	Pharm Sci	PS15
Recognize culturally sensitive and ethical approaches to patient counseling regarding genomic/pharmacogenomic test results.	Pharm Sci	PS16
Summarize basic genetic/genomic concepts and nomenclature.	Pharm Sci	PS17
Summarize how genetic variation in a large number of proteins influence pharmacokinetics and pharmacodynamics related to pharmacologic effect and drug response.	Pharm Sci	PS18
Summarize the “intermediate” stages of drug development including in vitro pre-clinical screening and in vivo pre-clinical screening.	Pharm Sci	PS19
Summarize the fundamentals of the early stages of drug development.	Pharm Sci	PS20
Understand strategies used by pharmaceutical and biotechnology companies to choose a therapeutic target.	Pharm Sci	PS21
Apply knowledge of commonly used prescription and non-prescription medications.	PharmT	PT01
Describe administration considerations and potential infusion-related complications for parenteral products and provide safe recommendations for prevention and management of adverse events.	PharmT	PT02
Examine pharmacotherapy issues specific to special populations.	PharmT	PT03
Identify and evaluate relevant clinical lab data or diagnostics essential to screen, diagnose, or evaluate treatment.	PharmT	PT04
Identify the key facts of the most common OTC drugs, supplements, alternative therapies and recognize their relevance to individual patients.	PharmT	PT05
Monitor and adjust therapy based on efficacy and tolerability.	PharmT	PT06
Recall the key facts of prescription drugs.	PharmT	PT07
Utilize clinical skills to select optimal therapy.	PharmT	PT08
Discuss the properties of microorganisms (bacteria, viruses, parasites, and fungi) as they relate to human disease and treatment.	PharmT	PT09
Accurately prepare a prescription for dispensing.	Patient Care Process	PtCP01
Acquire and demonstrate appropriate triage and referral skills when available pharmacist-recommended therapy options are not appropriate.	Patient Care Process	PtCP02
Assess medication orders accurately within an appropriate time frame.	Patient Care Process	PtCP03
Assume a professional responsibility in addressing health care problems by use of population specific and evidence-based disease management protocols.	Patient Care Process	PtCP04

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Collaborate as an interprofessional team member to achieve optimal patient outcomes.	Patient Care Process	PtCP05
Describe or demonstrate the medication dispensing, distribution and administration process in a community pharmacy.	Patient Care Process	PtCP06
Describe or demonstrate the medication dispensing, distribution and administration process in an institutional pharmacy.	Patient Care Process	PtCP07
Design and/or perform a public health service that advances community wellness.	Patient Care Process	PtCP08
Devise a plan and justify rationale to address drug-therapy concerns.	Patient Care Process	PtCP09
Evaluate appropriate information resources to provide evidence based drug information answers and patient centered care.	Patient Care Process	PtCP10
Identify and interpret relevant subjective and objective data obtained verbally or in written form to create, implement and evaluate patient centered care plans to advance patient outcomes.	Patient Care Process	PtCP11
Identify errors in prescription dispensing and compounding.	Patient Care Process	PtCP12
Identify/Apply principles of evidence-based clinical decision making for various disease states or conditions.	Patient Care Process	PtCP13
Interpret prescription orders by defining commonly used medical abbreviations and conversions.	Patient Care Process	PtCP14
Interpret scenario-based order to calculate a multi-step problem and report final answer(s) in a clinically appropriate manner.	Patient Care Process	PtCP15
Perform accurate calculations.	Patient Care Process	PtCP16
Summarize and demonstrate the pharmacist role, regardless of leadership position, delivering patient care in an interprofessional team.	Patient Care Process	PtCP17
Apply error theory to patient safety and medication safety in the healthcare workplace.	Patient Safety	PtS01
Apply patient safety strategies to reduce, eliminate or resolve medication errors.	Patient Safety	PtS02
Apply principles of quality assurance, quality improvement and patient safety.	Patient Safety	PtS03
Demonstrate ability to utilize quality assurance tools/methods.	Patient Safety	PtS04
Identify common causes of medication errors.	Patient Safety	PtS05
Apply socio-ecological model to public health issues currently impacting the health of both local and US population.	Social/Administrative Sciences	SAS01
Apply sound practice management principles.	Social/Administrative Sciences	SAS02
Demonstrate knowledge of the economic aspects of the US healthcare system, including pharmacoconomics, healthcare reform, and the governments' involvement in the healthcare system.	Social/Administrative Sciences	SAS03
Demonstrate knowledge of the history of the healthcare system and contemporary practice settings in the United States.	Social/Administrative Sciences	SAS04
Demonstrate knowledge of the role of the patient, pharmacist, profession of pharmacy, cultural awareness, and pharmaceutical industry in the US healthcare system.	Social/Administrative Sciences	SAS05
Demonstrate knowledge of the varied organizational practice settings within the US healthcare system.	Social/Administrative Sciences	SAS06
Demonstrate knowledge of the varied pharmacy payment structures within the US healthcare system.	Social/Administrative Sciences	SAS07

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Describe bioterrorism agents and antidotes for prophylaxis and treatment.	Social/Administrative Sciences	SAS08
Describe the issues surrounding health care disparities.	Social/Administrative Sciences	SAS09
Describe the role of a pharmacist in a mass vaccination or dispensing clinic.	Social/Administrative Sciences	SAS10
Describe the status and concepts of quality improvement in healthcare.	Social/Administrative Sciences	SAS11
Describe the use of human, financial, technological, and physical resources in developing safe and efficacious medication use systems.	Social/Administrative Sciences	SAS12
Develop an inter-professional team-based approach to address healthcare disparities.	Social/Administrative Sciences	SAS13
Discuss concepts of administrative, civil or criminal law, and ethics relative to the provision of patient care.	Social/Administrative Sciences	SAS14
Discuss the pharmacist's role in the promotion of public health.	Social/Administrative Sciences	SAS15
Exhibit personal/professional responsibility, commitment, and leadership during an emergency preparedness and response discussion and activity.	Social/Administrative Sciences	SAS16
Identify disaster types and the roles/responsibilities of interprofessional teams.	Social/Administrative Sciences	SAS17