



PREREQUISITE COURSES

The course information on this page is intended to serve as a guide and is not an official evaluation of transcripts. Applicants to the program will have their transcripts evaluated and will be notified during the admission process if the courses taken will meet the prerequisites for the program.

Prerequisite Courses & Descriptions	Semester	Quarter School
Science Courses		
<p>General Biology - must complete full year series with labs intended for science majors¹</p> <p>Two semesters (8 credits) or three quarters (15 credits) of a general biology series for students intending to take advanced courses in the biological sciences or enroll in pre-professional programs is required. Labs must be included. Topics cover the origin, evolution, and characteristics of living things and the processes that influence them, cellular respiration, photosynthesis, the cell cycle and genetics, cell biology and genetics of prokaryotes and eukaryotes including development, transport, nutrition, osmoregulation, sensory systems, and reproduction. (The WSU series is Biology 106 and 107)</p>	8 credits	15 credits
<p>General Chemistry - must complete full series with labs for science majors¹</p> <p>Two semesters (8 credits) or three quarters (15 credits) of general chemistry for science/chemistry majors with labs. Topics include measurements, atomic structure, ionic and molecular compounds, aqueous solutions and molarity, chemical reactions, stoichiometry, gases, quantum theory and electronic structure, periodicity, chemical bonding, molecular geometry, solid and liquid states, solutions, chemical kinetics, chemical equilibrium, acids and bases, solubility equilibria, thermo chemistry and chemical thermodynamics, and electrochemistry. Lab involves both qualitative and quantitative aspects of chemistry with necessary accuracy for such work. (The WSU series is Chemistry 105 and 106)</p>	8 credits	15 credits
<p>Organic Chemistry - must complete full series with labs for science majors¹</p> <p>Two semesters (7-8 credits) or three quarters (15 credits) of an organic chemistry series is required including at least 1 lab Comprehensive organic course covers structure, bonding, molecular properties, an overview of organic reactions, and stereochemistry, with emphasis on the properties and chemical reactivity, mechanisms, nomenclature and spectroscopy (IR, UV, NMR, MS) of the following organic functional groups: alkanes, cycloalkanes, alkenes, alkynes and alkylhalides, aromatic compounds (benzene), alcohols, thiols, ethers, epoxides, sulfides, aldehydes and ketones, carboxylic acids and derivatives (acid halides, acid anhydrides, esters, amides, and nitriles), carbonyl alpha-substitution reactions, carbonyl condensation reactions, aliphatic amines, arylamines and phenols, biomolecules (carbohydrates, amino acids, proteins, lipids, heterocycles and nucleic acids). (The WSU series is Chemistry 345 and 348)</p>	7-8 credits	15 credits
<p>Biochemistry¹</p> <p>One semester (4 credits) or one quarter (5 credits) biochemistry for undergraduate science majors: Structure and function of proteins, nucleic acids and biological membranes; principles of enzymology; major metabolic pathways, DNA structure and repair, RNA structure and transcription, regulation of transcription, Hardy-Weinberg equilibrium, basic population genetics. Must be upper-division to fulfill the requirement, or evaluated to be equivalent. (The WSU course is MBioS 303)</p>	4 credits	5 credits
<p>Microbiology with lab¹</p> <p>One semester (3-5 credits) or one quarter (5 credits) of a general microbiology course. Introduction to the study of bacteria, viruses, rickettsiae, spirochetes, fungi and protozoa with emphasis on structure, function, nutrition, physiology, and genetics of microbes and their application to immunology, pathology, microbial diversity, and environmental microbiology. (The WSU course equivalent is MBios 304 and MBios 305)</p>	3-5 credits	5 credits

<p>Human Anatomy with lab¹</p> <p>One semester course (4 credits) that includes gross and microscopic anatomy of the human body. Must include lab. May take integrated Anatomy and Physiology (2 semesters, 8 credits or 3 quarters, 15 credits) with labs. See Physiology below. Upper division course is preferred. (The WSU course is Biol 315)</p>	4 credits	5-10 credits
<p>Physiology¹</p> <p>One semester course (4 credits) examining function and control at the cell-tissue level, and at the organ-organismic level including each of the major organ systems (cardiovascular, respiratory, renal, endocrine, neural and gastrointestinal) as well as basic concepts of cellular physiology. Must include lab. Emphasis on mammalian/human physiology. May take integrated Anatomy and Physiology (2 semesters, 8 credits or 3 quarters, 15 credits) with labs. See Anatomy above. Upper division course is preferred. (The WSU course is Biol 353 or Neuro 425 & Neuro 426)</p>	4 credits	5-10 credits

General Courses		
<p>English Writing – 2 semesters, 3 credits each²</p> <ol style="list-style-type: none"> Undergraduate composition course to develop students' academic writing, critical thinking, rhetorical strategies, reading and library skills. Research writing: defining, proposing, reporting progress; presenting a final product; other professional writing needs. Or Designed to provide students with advanced practice in and study of style, argument, and other discourse conventions. <p>(WSU course choices include English 101, 201, 301, 402 and/or [W])</p>	6-8 credits	10 credits
<p>Philosophy²</p> <p>One semester (3 credits) or one quarter (5 credits) of philosophy instruction in logic, critical thinking or ethics. (The WSU course choices include Phil 103, 200, 201 or 365)</p>	3 credits	5 credits
<p>Calculus¹</p> <p>One semester (3-4 credits) or one quarter (5 credits) of the first calculus course in a calculus series. Emphasizes functions of a single variable, differential calculus, differentiation, applications of derivatives, integration with applications and problem solving using the tools of calculus. (The WSU courses are Math 140, 171 or 202)</p>	3-4 credits	5 credits
<p>Statistics¹</p> <p>One semester (3-4 credits) or one quarter (5 credits) of a Statistics course. Introduction to descriptive and inferential statistics. Interpretation of estimates, confidence intervals, and significance tests. Elementary concepts of probability and sampling; binomial and normal distributions. Basic concepts of hypothesis testing, estimation, and confidence intervals; t-tests and chi-square tests. Linear regression theory and the analysis of variance. (The WSU course is Stat 212)</p>	3-4 credits	5 credits
<p>Microeconomics²</p> <p>One semester (3-4 credits) or one quarter (5 credits) Theory and policy of human responses to scarcity; how this affects business competition, international trade, industrial organization, investment, and income distribution. (The WSU course is EconS 101)</p>	3-4 credits	5 credits
<p>Psychology²</p> <p>One semester (3 credits) or one quarter (5 credits). Contemporary psychology; biological and social influences on normal and abnormal human behavior. (The WSU course is Psych 105)</p>	3 credits	5 credits

¹ The science courses on this list must be completed by the end of the spring term before beginning the PharmD program.

² These courses may be completed by the end of the summer term before beginning the PharmD program.

Contact us for transcript evaluations, course equivalencies, or to arrange a campus visit at admissions@pharmacy.wsu.edu or 509-368-6605.