

Northwest Missouri State University Department of Natural Sciences Chemistry: Medicinal Emphasis – Research & Development Bachelor of Science

Term 1	Course Title/Description	Pre-requisite	Cr Hrs	Milestone/Notes
17-117 OR 17-120	Precalculus OR Calculus	Precalc: Minimum ACT Math 22 or high school GPS of 3.5 Calculus I: Precaclulus OR Precaclulus Algebra AND	4-5	
		Trignometry OR ACT Math score of 27 or high school GPA 3.9		
04-106/107	Principles of Biology & Lab		4	
77-101	University Seminar		1	
10-111	Composition I		3	
24-114/115	General Chemistry I & Lab		4	Enrolling in General Chemistry 112/113 should be considered prior to General Chemistry I if a rigorous high school Chemistry background is absent. Similar considerations without proficiency in high school Algebra II.
		Total Hours	16-17	
Term 2	Course Title/Description	Pre-requisite	Cr Hrs	Milestone/Notes
10-112	Composition II	Composition I	3	
24-116/117	General Chemistry II & Lab	General Chemistry I & Lab	5	
04-140	General Microbiology	Principles of Biology & Lab OR General Biology & Lab OR General Chemistry I & Lab	4	
17-120	Calculus I	Precalculus OR Precalculus Algebra AND Trigonometry	4	Students with 27 ACT math score are eligible to begin with Calculus I. Most pharmacy schools require Calculus I. Refer to pharmacy program of interests.
		Total Hours	16	
Term 3	Course Title/Description	Pre-requisite	Cr Hrs	Milestone/Notes
24-342/343	Organic Chemistry I & Lab	General Chemistry II & Lab	4	
04-350	Genetics	Principles of Biology & Lab	4	
29-102	Fundamentals of Oral Communication		3	
17-121	Calculus II	Calculus I	5	
		Total Hours	16	

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Term 4	Course Title/Description	Pre-requisite	Cr Hrs	Milestone/Notes
24-344/345	Organic Chemistry II & Lab	Organic Chemistry I & Lab	4	·
•	American Experience		3	
04-310	Cell Biology	Principles of Biology & Lab	4	Recommended to have
		AND General Chemistry I &		Organic Chemistry I & Lab
		Lab AND General		
		Chemistry II & Lab		
10-220	Intro to Literature		3	
		Total Hours	14	
Term 5	Course Title/Description	Pre-requisite	Cr Hrs	Milestone/Notes
08-103	General Psychology		3	
24-110/111 OR	General Physics I & Lab OR	General: Mathematical	4-5	
25-120/121	Classical Physics I & Lab	Modeling OR Precacl OR		
		Precalculus Algebra OR		
		Calculus I		
		Classical: Calculus I		
24-322/323	Analytical Chemistry & Lab	General Chemistry II & Lab	4	
24-562	General Biochemistry		3	
		Total Hours	14-15	
Term 6	Course Title/Description	Pre-requisite	Cr Hrs	Milestone/Notes
25-112/113 OR	General Physics II & Lab OR	General: Mathematical	4-5	
25-230/231	Classical Physics II & Lab	Modeling OR Precacl OR		
		Precalculus Algebra OR		
		Calculus I		
		Classical: Calculus II AND		
		Classical Physics I & Lab		
	Western Experience		3	
24-552/555 OR	Advanced Inorganic Chemistry & Lab OR	Adv Inorg: Physical	4	
24-522/523	Instrumental Analysis & Lab	Chemistry I		
		Instrumental: Analytical		
		Chemistry & Lab		
24-436	Medicinal Chemistry I	Permission of Instructor	3	Taught ONLINE through
	<u> </u>			University of Kansas
	Elective	T.1.111	2	
		Total Hours	13-14	
Term 7	Course Title/Description	Pre-requisite	Cr Hrs	Milestone/Notes
24-532/533	Physical Chemistry I & Lab	General Chemistry II & Lab	4	
		AND Classical Physics I		
24.422	A. II	AND Calculus II		T 1.000
24-438	Medicinal Chemistry II	Permission of Instructor	3	Taught ONLINE through
				University of Kansas
	Behavioral & Social Science	-	3	
	Global Experiences	-	3	
	Digital Literacy	Total Hours	3	
		16		

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Term 8	Course Title/Description	Pre-requisite	Cr Hrs	Milestone/Notes
24-534/535	Physical Chemistry II & lab	Physical Chemistry I &* Lab	4	
24-592	Chemistry Seminar		1	
24-552/555 OR 24-522/523	Advanced Inorganic Chemistry & Lab OR Instrumental Analysis & Lab	Adv Inorg: Physical Chemistry I Instrumental: Analytical Chemistry & Lab	4	
	Fine Arts		3	
	Elective		3	
Total Hours				

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