

Northwest Missouri State University Department of Natural Sciences Nanoscience: Nanoscale Biology Bachelor of Science

Term 1	Course Title/Description	Pre-requisite	Cr Hrs	Milestone/Notes
17-117	Precalculus		5	Minimum ACT math score of 24 OR minimum high school GPA 3.8 OR minimum grade of C in MATH 17082 OR concurrent with MATH
				17017
77-101	University Seminar		1	
24-114/115	General Chemistry I & Lab		4	
04-106/107	Principles of Biology & Lab		4	
10-111	Composition I		3	
		Total Hours	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	
29-102	Fundamentals of Oral Communication		3	
17-120	Calculus I	Precalculus OR Precalculus	4	ACT Math score of at
		Algebra AND		least 27, or high school
		Trigonometry.		FPA of 3.9 recommended
		Total Hours	15	
Term 3	Course Title/Description	Pre-requisite	Cr Hrs	Milestone/Notes
04-310	Cell Biology	Principles of Biology & Lab AND Gen Chemistry II & Lab	4	
24-342/343	Organic Chemistry I & Lab	General Chemistry II & Lab	4	FALL ONLY course
10-220	Intro to Literature		3	
25-120/121 OR	Classical Physics I & Lab OR	Classical: Calculus I	4-5	Classical Physics I FALL
25-110/111	General Physics I & Lab	Gen Physics: Mathematical Modeling OR Precalculus OR Trigonometry OR Calculus I		ONLY course
		Total Hours	15-16	



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Term 4	Course Title/Description	Pre-requisite	Cr Hrs	Milestone/Notes
04-350	Genetics	Principles of Biology & Lab	4	
24-344/345	Organic Chemistry II & Lab	Organic Chemistry I & Lab	4	SPRING ONLY course
17-114	General Statistics		3	ACT Math score of 33 or higher, high school GPS of 3.00 or higher OR concurrent with Strategies for General Statistics
25-230/231 OR 25-112/113	Classical Physics II & Lab OR General Physics II & Lab	Classical: Calculus I Gen Physics: Mathematical Modeling OR Precalculus OR Trigonometry OR Calculus I	4-5	Classical Physics II SPRING ONLY course MAY TAKE EITHER Classical Physics Sequence OR General Physics Sequence
		Total Hours	15-16	
Term 5	Course Title/Description	Pre-requisite	Cr Hrs	Milestone/Notes
	Digital Literacy		3	
	Civics: Political Science		3	
	Approved Biology Emphasis Elective		3-4	See list below
	Elective		3	
48-314	Nanoscale I	Calculus I, Calculus II, General Chemistry I & Lab, General Chemistry II & Lab, Classical Physics I & Lab, Classical Physics II & Lab, Organic Chemistry I AND Junior Standing	4	FALL EVEN YEARS only
		Total Hours	16-17	
Term 6	Course Title/Description	Pre-requisite	Cr Hrs	Milestone/Notes
48-315	Nanoscale II	Calculus I, Cell Biology, Classical Physics I & Lab, Classical Physics II & Lab AND Junior Standing	4	SPRING ODD YEARS only
04-440	Molecular Biology	Genetics, Recommended pre-reqs: Microbiology AND Cell Biology	4	SPRING ODD YEARS only
	Approved Biology Emphasis Elective		3-4	See list below
	Social & Behavioral Science		3	
		Total Hours	14-15	

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Term 7	Course Title/Description	Pre-requisite	Cr Hrs	Milestone/Notes
	Humanities		3	
	Fine Art		3	
24-562/563	General Biochemistry & Lab	Organic Chemistry I & Lab	4	FALL ONLY course
04-511	Techniques in Biotechnology	Genetics, Recommended	4	FALL ODD YEARS only
		pre-req: Microbiology		
		Total Hours	14	
Term 8	Course Title/Description	Pre-requisite	Cr Hrs	Milestone/Notes
	Approved Biology Emphasis Elective		3-5	See list below
	Social & Behavioral Science		3	
39-276	Biomedical Ethics		3	
	Civics: History		3	
	Elective		1	
		Total Hours	13-15	

	ology Emphasis Electives - Minimum			
04-140	General Microbiology	Principles of Biology AND	4	
		General Chemistry I & Lab		
04-401	Research: Cellular Biology		1-3	
04-444	Immunology	General Microbiology AND	5	Spring only
		General Chemistry I & Lab		
04-491	Biological Science Seminar	Genetics	1	
24-135	Laboratory Safety	General Chemistry I & Lab	2	
24-566	Macromolecular Structure Lecture	General Biochemistry &	3	Spring only
		Lab		Must be taken with 24-
				567
24-567	Macromolecular Structure Lab	General Biochemistry &	1	Spring only
		Lab		Must be taken with 24-
				566
04-478	Readings in Molecular Biology	Cell Biology	1	Fall, alternating years
		Molecular Biology		

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