

Northwest Missouri State University Department of Natural Sciences Biology: Biomedical Sciences Comprehensive Major – No Minor Required Bachelor of Science

This degree track is intended for students interested in preparation for professional programs such as **medical, dental, veterinary, and optometry** school. Many of the requirements for these programs are the same. Students are encouraged to speak to their academic advisor about how best to utilize their elective hours to give themselves the best chance for admission to one of these programs.

Term 1	Course Title/Description	Pre-requisite	Cr Hrs	Milestone/Notes
04-106/107	Principles of Biology & Lab		4	
24-114/115	General Chemistry I & Lab		4	
10-111	Composition I		3	
17-117 OR	Precalculus OR	Precalculus: A minimum ACT	3-5	
17-118 OR	Precalculus Algebra OR	Math score of 22, or a		
17-120	Calculus I	minimum high school GPA of		
		3.5		
		Precalc Algebra: A minimum		
		ACT Math score of 22, or a		
		minimum high school GPA of		
		3.5 OR concurrent with		
		Strategies for Precalculus		
		Algebra		
		Calculus I: Precalculus OR		
		Precalculus Algebra AND		
		Trigonometry OR ACT Math		
		score of at least 27, or high		
		school GPA of 3.9 is recommended		
77-101	University Cominer	recommended	1	
77-101	University Seminar	Total Hours	15-17	
Term 2	Course Title/Description	Pre-requisite	Cr Hrs	Milestone/Notes
Term 2 04-112/113 OR	Course Title/Description General Botany & Lab OR	Pre-requisite Principles of Biology & Lab	Cr Hrs 4	Milestone/Notes
Term 2 04-112/113 OR 04-114/115	Course Title/Description General Botany & Lab OR General Zoology & Lab	Pre-requisite Principles of Biology & Lab		Milestone/Notes
04-112/113 OR	General Botany & Lab OR			Milestone/Notes
04-112/113 OR 04-114/115	General Botany & Lab OR General Zoology & Lab	Principles of Biology & Lab	4	Milestone/Notes
04-112/113 OR 04-114/115 24-116/117	General Botany & Lab OR General Zoology & Lab General Chemistry II & Lab	Principles of Biology & Lab General Chemistry I & Lab	4	Milestone/Notes
04-112/113 OR 04-114/115 24-116/117 10-112	General Botany & Lab OR General Zoology & Lab General Chemistry II & Lab Composition II	Principles of Biology & Lab General Chemistry I & Lab	4 5 3	
04-112/113 OR 04-114/115 24-116/117 10-112	General Botany & Lab OR General Zoology & Lab General Chemistry II & Lab Composition II General Psychology	Principles of Biology & Lab General Chemistry I & Lab	4 5 3	Recommended Social & Behavioral Science
04-112/113 OR 04-114/115 24-116/117 10-112 08-103 Term 3	General Botany & Lab OR General Zoology & Lab General Chemistry II & Lab Composition II General Psychology Course Title/Description	Principles of Biology & Lab General Chemistry I & Lab Composition I Total Hours Pre-requisite	4 5 3 3	Recommended Social &
04-112/113 OR 04-114/115 24-116/117 10-112 08-103 Term 3 04-112/113 OR	General Botany & Lab OR General Zoology & Lab General Chemistry II & Lab Composition II General Psychology Course Title/Description General Botany & Lab OR	Principles of Biology & Lab General Chemistry I & Lab Composition I Total Hours	4 5 3 3 15	Recommended Social & Behavioral Science
04-112/113 OR 04-114/115 24-116/117 10-112 08-103 Term 3 04-112/113 OR 04-114/115	General Botany & Lab OR General Zoology & Lab General Chemistry II & Lab Composition II General Psychology Course Title/Description General Botany & Lab OR General Zoology & Lab	Principles of Biology & Lab General Chemistry I & Lab Composition I Total Hours Pre-requisite Principles of Biology & Lab	4 5 3 3 15 Cr Hrs 4	Recommended Social & Behavioral Science
04-112/113 OR 04-114/115 24-116/117 10-112 08-103 Term 3 04-112/113 OR 04-112/113 OR 04-114/115 24-342/343	General Botany & Lab OR General Zoology & Lab General Chemistry II & Lab Composition II General Psychology Course Title/Description General Botany & Lab OR General Zoology & Lab Organic Chemistry I & Lab	Principles of Biology & Lab General Chemistry I & Lab Composition I Total Hours Pre-requisite	4 5 3 3 15 Cr Hrs 4	Recommended Social & Behavioral Science
04-112/113 OR 04-114/115 24-116/117 10-112 08-103 Term 3 04-112/113 OR 04-112/113 OR 04-114/115 24-342/343 29-102	General Botany & Lab OR General Zoology & Lab General Chemistry II & Lab Composition II General Psychology Course Title/Description General Botany & Lab OR General Zoology & Lab Organic Chemistry I & Lab Fundamentals of Oral Communication	Principles of Biology & Lab General Chemistry I & Lab Composition I Total Hours Pre-requisite Principles of Biology & Lab	4 5 3 3 15 Cr Hrs 4 4 3	Recommended Social & Behavioral Science Milestone/Notes
04-112/113 OR 04-114/115 24-116/117 10-112 08-103 Term 3 04-112/113 OR 04-112/113 OR 04-114/115 24-342/343	General Botany & Lab OR General Zoology & Lab General Chemistry II & Lab Composition II General Psychology Course Title/Description General Botany & Lab OR General Zoology & Lab Organic Chemistry I & Lab	Principles of Biology & Lab General Chemistry I & Lab Composition I Total Hours Pre-requisite Principles of Biology & Lab	4 5 3 3 15 Cr Hrs 4	Recommended Social & Behavioral Science Milestone/Notes Recommended Social &
04-112/113 OR 04-114/115 24-116/117 10-112 08-103 Term 3 04-112/113 OR 04-112/113 OR 04-114/115 24-342/343 29-102 35-102	General Botany & Lab OR General Zoology & Lab General Chemistry II & Lab Composition II General Psychology Course Title/Description General Botany & Lab OR General Zoology & Lab Organic Chemistry I & Lab Fundamentals of Oral Communication General Sociology	Principles of Biology & Lab General Chemistry I & Lab Composition I Total Hours Pre-requisite Principles of Biology & Lab General Chemistry II & Lab	4 5 3 3 15 Cr Hrs 4 4 3 3 3	Recommended Social & Behavioral Science Milestone/Notes
04-112/113 OR 04-114/115 24-116/117 10-112 08-103 Term 3 04-112/113 OR 04-112/113 OR 04-114/115 24-342/343 29-102	General Botany & Lab OR General Zoology & Lab General Chemistry II & Lab Composition II General Psychology Course Title/Description General Botany & Lab OR General Zoology & Lab Organic Chemistry I & Lab Fundamentals of Oral Communication	Principles of Biology & Lab General Chemistry I & Lab Composition I Total Hours Pre-requisite Principles of Biology & Lab General Chemistry II & Lab An ACT Math score of 22 or	4 5 3 3 15 Cr Hrs 4 4 3	Recommended Social & Behavioral Science Milestone/Notes Recommended Social &
04-112/113 OR 04-114/115 24-116/117 10-112 08-103 Term 3 04-112/113 OR 04-112/113 OR 04-114/115 24-342/343 29-102 35-102	General Botany & Lab OR General Zoology & Lab General Chemistry II & Lab Composition II General Psychology Course Title/Description General Botany & Lab OR General Zoology & Lab Organic Chemistry I & Lab Fundamentals of Oral Communication General Sociology	Principles of Biology & Lab General Chemistry I & Lab Composition I Total Hours Pre-requisite Principles of Biology & Lab General Chemistry II & Lab An ACT Math score of 22 or higher, high school GPA of	4 5 3 3 15 Cr Hrs 4 4 3 3 3	Recommended Social & Behavioral Science Milestone/Notes Recommended Social &
04-112/113 OR 04-114/115 24-116/117 10-112 08-103 Term 3 04-112/113 OR 04-112/113 OR 04-114/115 24-342/343 29-102 35-102	General Botany & Lab OR General Zoology & Lab General Chemistry II & Lab Composition II General Psychology Course Title/Description General Botany & Lab OR General Zoology & Lab Organic Chemistry I & Lab Fundamentals of Oral Communication General Sociology	Principles of Biology & Lab General Chemistry I & Lab Composition I Total Hours Pre-requisite Principles of Biology & Lab General Chemistry II & Lab An ACT Math score of 22 or higher, high school GPA of 3.00 or higher OR	4 5 3 3 15 Cr Hrs 4 4 3 3 3	Recommended Social & Behavioral Science Milestone/Notes Recommended Social &
04-112/113 OR 04-114/115 24-116/117 10-112 08-103 Term 3 04-112/113 OR 04-112/113 OR 04-114/115 24-342/343 29-102 35-102	General Botany & Lab OR General Zoology & Lab General Chemistry II & Lab Composition II General Psychology Course Title/Description General Botany & Lab OR General Zoology & Lab Organic Chemistry I & Lab Fundamentals of Oral Communication General Sociology	Principles of Biology & Lab General Chemistry I & Lab Composition I Total Hours Pre-requisite Principles of Biology & Lab General Chemistry II & Lab General Chemistry II & Lab	4 5 3 3 15 Cr Hrs 4 4 3 3 3	Recommended Social & Behavioral Science Milestone/Notes Recommended Social &
04-112/113 OR 04-114/115 24-116/117 10-112 08-103 Term 3 04-112/113 OR 04-112/113 OR 04-114/115 24-342/343 29-102 35-102	General Botany & Lab OR General Zoology & Lab General Chemistry II & Lab Composition II General Psychology Course Title/Description General Botany & Lab OR General Zoology & Lab Organic Chemistry I & Lab Fundamentals of Oral Communication General Sociology	Principles of Biology & Lab General Chemistry I & Lab Composition I Total Hours Pre-requisite Principles of Biology & Lab General Chemistry II & Lab An ACT Math score of 22 or higher, high school GPA of 3.00 or higher OR	4 5 3 3 15 Cr Hrs 4 4 3 3 3	Recommended Social & Behavioral Science Milestone/Notes Recommended Social &



= a milestone course completed by end of year 1 to remain on pace to finish degree requirements in four years.

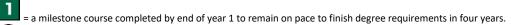
= a milestone course completed by end of year 2 to remain on pace to finish degree requirements in four years.

= a milestone course completed by end of year 3 to remain on pace to finish degree requirements in four years.

= a milestone courses taken in final year to complete degree requirements.



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	
	Digital Literacy		3	
	Fine Art		3	
		Total Hours	14	
Term 5	Course Title/Description	Pre-requisite	Cr Hrs	Milestone/Notes
25-110/111	General Physics I & Lab	Mathematical Modeling OR Precalculus OR Precalculus Algebra OR Calculus I	4	Consider taking during a summer term to distribute your science course load more evenly.
04-310	Cell Biology	Principles of Biology & Lab AND General Chemistry I & Lab AND General Chemistry II & Lab	4	Recommended prerequisite Organic Chemistry I & Lab
	Humanities		3	
24-562	General Biochemistry	Organic Chemistry I & Lab	3	
	Upper-level Elective		3	
		Total Hours	17	
Term 6	Course Title/Description	Pre-requisite	Cr Hrs	Milestone/Notes
39-276	Biomedical Ethics		3	Recommended Humanities
25-112/113	General Physics II & Lab	Mathematical Modeling OR Precalculus OR Precalculus Algebra OR Calculus I	4	Consider taking during a summer term to distribute your science course load more evenly.
04-140	General Microbiology	Principles of Biology & Lab AND General Chemistry I & Lab	4	Consider taking during a summer term to distribute your science course load more evenly.
04-438	Human Physiology	Cell Biology	4	
		Total Hours	15	



= a milestone course completed by end of year 2 to remain on pace to finish degree requirements in four years.

= a milestone course completed by end of year 3 to remain on pace to finish degree requirements in four years.

4 = a milestone courses taken in final year to complete degree requirements.

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Term 7	Course Title/Description	Pre-requisite	Cr Hrs	Milestone/Notes
04-435 OR 04-436	Comparative Anatomy OR Human Anatomy	Comparative: General Zoology & Lab AND	4-5	Human Anatomy recommended
		General Physics I & Lab OR Classical Physics I & Lab Human: General Zoology &		prerequisite Medical Terminology
		Lab		
34-102	Intro to American Government and Politics		3	
04-376	Basic Ecology	General Botany & Lab AND General Zoology & Lab	4	
33-155 OR	The United States to 1877 OR		3	
33-156	The United States since 1877			
		Total Hours	14-15	
Term 8	Course Title/Description	Pre-requisite	Cr Hrs	Milestone/Notes
04-348	Biological Evolution & Diversity	General Botany & Lab AND General Zoology & Lab	2	Consider taking during a summer term to distribute your science course load more evenly.
04-491	Biological Science Seminar	Genetics	1	
10-220	Intro to Literature		3	
22-336	Basic Biomechanics	Anatomy	3	Recommended upper- level elective
	Elective		4	
		Total Hours	13	

= a milestone course completed by end of year 1 to remain on pace to finish degree requirements in four years.

= a milestone course completed by end of year 2 to remain on pace to finish degree requirements in four years.

= a milestone course completed by end of year 3 to remain on pace to finish degree requirements in four years.

a milestone courses taken in final year to complete degree requirements.

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