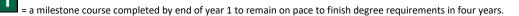


Northwest Missouri State University Department of Natural Sciences Physics –Computer Science Emphasis Bachelor of Science

Term 1	Course Title/Description	Pre-requisite	Cr Hrs	Milestone/Notes
17-117	Precalculus	Minimum ACT math score of 22 OR minimum high school GPA 3.5	5	
29-102	Fund of Oral Communication		3	
77-101	University Seminar		1	
	Digital Literacy		3	
24-114/115	General Chemistry I & Lab		4	
	·	Total Hours	16	
Term 2	Course Title/Description	Pre-requisite	Cr Hrs	Milestone/Notes
44-141	Computer Programming I		3	•
10-111	Composition I		3	
04-106/107	Principles of Biology & Lab		4	
17-120	Calculus I	Precalculus Algebra OR Precalculus AND Trigonometry	4	1
	Global Experience		3	
		Total Hours	17	
Term 3	Course Title/Description	Pre-requisite	Cr Hrs	Milestone/Notes
17-121	Calculus II	Calculus I	5	
44-241	Computer Programming II	Computer Programming I	3	
25-120/121	Classical Physics I & Lab	Calculus I	5	FALL only
-	Fine Art		3	
17-114	General Statistics	ACT Math >22, HS GPA > 3.0	3	Elective ONLY required for BIG DATA
		Total Hours	16-19	
Term 4	Course Title/Description	Pre-requisite	Cr Hrs	Milestone/Notes
17-321	Calculus III	Calculus II	4	
34-102	Intro to American Government		3	
25-230/231	Classical Physics II & Lab	Classical Physics I & Lab AND Calculus II	5	SPRING only
44-242	Data Structures	Computer Programming II AND Calculus I	3	2
		Total Hours	15	
Term 5	Course Title/Description	Pre-requisite	Cr Hrs	Milestone/Notes
44-249	Building Blocks of Theoretical Computer Science	Computer Programming II AND Calculus I	3	EITHER/OR with BIG DATA
25-350	Intro to Quantum Mechanics	Classical Physics II & Lab	3	FALL ODD YEARS only
17-311	Linear Algebra	Calculus I	3	Computer Science
				Elective FALL only



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Northwest Missouri State University Department of Natural Sciences Physics –Computer Science Emphasis Bachelor of Science

25-330 OR	Electricity and Magnetism	Electricity and Magnetism:	3	Physics Electives
25-430	Optics	Classical Physics II AND	3	Electricity and Magnetism
		Calculus III		& Optics: FALL EVEN
		Optics: Calculus II		YEARS only
10-112	Composition II	Composition I	3	
	American Experiences		3	
17-316	Linear Statistical Models	General Statistics OR	3	<u>Elective</u>
		Probability and Statistics		ONLY required for BIG
				DATA
				FALL only
Total Hours			12-21	

Term 6	Course Title/Description	Pre-requisite	Cr Hrs	Milestone/Notes
44-345	Computer Organization	Data Structures	3	SPRING only
25-352 OR	Modern Physics	Modern: Classical Physics II	3	Modern: SPRING ODD
25-450	Computational Physics	& Lab		YEARS only
		Classical Physics II & Lab		Computational: SPRING
		AND Computer		EVEN YEARS only
		Programming I		
44-349	Survey of Algorithms	Data Structures AND	3	<u>Computer Science</u>
		Building Blocks AND		<u>Elective</u>
		Calculus I		SPRING only
24-332/333 OR	Electronics & Lab	Electronics: Classical	4	Physics Electives
25-360	Quantum Mechanics	Physics II	3	Electronics: SPRING ODD
		Quantum: Introduction to		YEARS only
		Quantum OR Physical		Quantum: SPRING EVEN
		Chemistry I & Lab AND		YEARS only
		Calculus III		
17-361	Differential Equations	Calculus II	3	SPRING only
	Social & Behavioral Science		3	
		Total Hours	12-19	
Term 7	Course Title/Description	Pre-requisite	Cr Hrs	Milestone/Notes
44-517	Big Data	Data Structures AND	3	EITHER/OR with
		Probability and Statistics		BUILDING BLOCKS OF
		OR Linear Statistical		THEORETICAL COMPUTER
		Models		SCIENCE
				FALL only
25-350	Intro to Quantum Mechanics	Classical Physics II & Lab	3	FALL ODD YEARS only
44-550 OR	Operating Systems	Operating Systems:	3	<u>Computer Science</u>
17-311	Linear Algebra	Computer Organization		<u>Elective</u>
		Linear Algebra: Calculus I		FALL only
25-330 OR	Electricity and Magnetism	Electricity and Magnetism:	3	Physics Electives
25-430	Optics	Classical Physics II AND	3	Electricity and
		Calculus III		Magnetism: FALL EVEN
		Optics: Calculus II		YEARS only
				Optics: FALL EVEN YEARS
				only



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29-102	Fund. Of Oral Communication		3	
10-220	Intro to Literature		3	
	Elective		3	
	Total Hours			
Term 8	Course Title/Description	Pre-requisite	Cr Hrs	Milestone/Notes
	Humanities		3	
	Social & Behavioral Science		3	
25-352 OR	Modern Physics	Modern: Classical Physics II	3	Modern: SPRING ODD
25-450	Computational Physics	& Lab		YEARS only
		Classical Physics II & Lab		Computational: SPRING
		AND Computer		EVEN YEARS only
		Programming I		
44-349	Survey of Algorithms	Data Structures AND	3	Computer Science
		Building Blocks AND		<u>Elective</u>
		Calculus I		SPRING only
24-332/333 OR	Electronics & Lab	Electronics: Classical	4	Physics Electives
25-360	Quantum Mechanics	Physics II	3	Electronics: SPRING ODD
		Quantum: Introduction to		YEARS only
		Quantum OR Physical		Quantum: SPRING EVEN
		Chemistry I & Lab AND		YEARS only
		Calculus III		
25-489 OR	Physics Practicum OR	Permission of Instructor	2	
25-499	Special Investigations in Physics			
	Elective		2	
Total Hours			13-20	

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