Northwest Missouri State University
School of Computer Science and Information Systems
Data Management Emphasis
Bachelor of Science

Term 1	Course Title/Description	Pre-requisite	Cr Hrs	Milestone/Notes
44-101	Foundations of Computing		3	
44-141	Computer Programming I	2 units of high school algebra and either CSIS 44101 OR CSIS 44130 with a grade of C or better, or School director's permission	3	
29-102	Fund of Oral Communication		4	
10-111	English Composition I		3	
77-101	University Seminar		1	
		Total Hours	**14**	

Term 2	Course Title/Description	Pre-requisite	Cr Hrs	Milestone/Notes
44-241	Computer Programming II	CSIS 44141 with a grade of C or better	3	**1**
10-112	English Composition II	ENGL 10111	3	
	Fine Arts		3	
	Life Science/Lab		4	
17-118	Pre-Calculus Algebra (OP B*)	An ACT Math score of 22 or higher, or a score of PASS on the NW Algebra Review, or a minimum grade of C in MATH 17082, or concurrent enrollment in MATH 17018	3	
		Total Hours	**16**	

Term 3	Course Title/Description	Pre-requisite	Cr Hrs	Milestone/Notes
44-242	Data Structures	CSIS 44241, and MATH 17114 or MATH 17117 or MATH 17118 or MATH 17120 (or concurrent enrollment), all with a grade of C or better, or consent of instructor	3	**2**
17-114	General Stats (Option B)*	An ACT Math score of 22 or higher, high school GPA of 3.00 or higher, or a minimum grade of C in MATH 17082, or concurrent enrollment in MATH 17014.	3	
44-296	Professional Develop Seminar	Sophomore standing and CSIS 44141	3	
44-356	Network Fundamentals	CSIS 44130 or CSIS 44101 with a grade of C or better	3	**2**
	Physical Science/Lab**		4	
		Total Hours	**16**	

Term 4	Course Title/Description	Pre-requisite	Cr Hrs	Milestone/Notes
44-345	Computer Org	CSIS 44242, with a grade of C or better, and one semester of chemistry, physics, or physical science.	3	**2**
44-460	Database Systems	CSIS 44241, with a grade of C or better	3	**2**
	Intro to Am Gov't &Politics		3	
44-249	Building Blocks of Theoretical CS	Sophomore standing and a minimum grade of C in CSIS 44141 and any of the following: MATH 17117 or MATH 17118 or MATH 17120.	3	**2**

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

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

3 = 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.

		Pre-requisite	Cr Hrs	Milestone/Notes
	Humanities		3	
	Total Hours		**15**	

Term 5	Course Title/Description	Pre-requisite	Cr Hrs	Milestone/Notes
	Civics - History		3	
17-316	Linear Stat Model I	A minimum grade of C in either MATH 17114 or MATH 17230, or consent of instructor	3	
44-517	Big Data	MATH 17230 or MATH 17316, both with a grade of C or better and CSIS 44242 with a grade of C or better	3	Fall Only ⬠3
	Approved CS/IS Elective (300+ Level)		3	
	Social & Behavioral Science		3	
	Total Hours		**15**	

Term 6	Course Title/Description	Pre-requisite	Cr Hrs	Milestone/Notes
44-349	Survey of Algorithms	CSIS 44242 and CSIS 44249 each with a grade of C or better. (S)	3	Spring Only ⬠3
	Humanities		3	
10-220	Intro to Literature		3	
44-560	Adv. Database System	CSIS 44241 and CSIS 44460, each with a grade of C or better.	3	⬠3
	Approved CS/IS Elective (300+ Level)		3	
	Total Hours		**15**	

Term 7	Course Title/Description	Pre-requisite	Cr Hrs	Milestone/Notes
44-525	Theo & Imp of Prog Lang	CSIS 44242 and CSIS 44249, with grades of C or better, or consent of instructor.	3	Fall only △4
44-550	Operating Systems	CSIS 44345, with a grade of C or better	3	Fall only △4
44-561	Software Engineering Principles	CSIS 44242 and CSIS 44460 with a grade of C or better	3	Fall only △4
44-566	Applied Data Analytics	CSIS 44460 with a grade of C or better.	3	△4
	Electives		3	
	Total Hours		**15**	

Term 8	Course Title/Description	Pre-requisite	Cr Hrs	Milestone/Notes
44-562	Software Engineering Practices	Prerequisite: CSIS 44561 with a grade of C or better	3	Spring Only △4
	Approved CS/IS Elective (300+ Level)		3	
	Electives		5	
	Social & Behavioral Sciences		3	
	Total Hours		**14**	

*Schedule shows Math Option B. Students may elect for Math Option A instead. If Math Option A is chosen, then make the following substitutions:
- Spring year 1-replace 17-118 Pre-calculus Algebra with 17-117 Pre-calculus (4hours)
- Fall year 2-replace 17-114 General Statistics with 17-120 Calculus (4 hours)
- Fall year 3-replace 17-316 Linear Stat Model I with 17-230 Probability and Statistics

**Taking Fundamentals of Classical Physics I & Lab (5 hours) will reduce elective hours by 1.