MATHEMATICS (DATA SCIENCE CONCENTRATION), BACHELOR OF SCIENCE

The University Core Curriculum is the same across all undergraduate bachelor's programs. Please consult the academic advisor for your designated major before selecting courses in this area.

SUMMARY

Code	Title	Hours
General Education Core Curriculum (p.)		43
Major Requirements (p.)		41
Other Requirements (p.)		24
Data Science Concentration (p.)		12
Total Hours		**120**

GENERAL EDUCATION CORE CURRICULUM (STANDARD) [1]

Code	Title	Hours
Communication		
ENGL 1301	Freshman English I	3
ENGL 1302	Freshman English II	3
Mathematics [2]		
MATH 2413	Calculus & Analytic Geomtry I	4
Life and Physical Sciences		
CHEM 1311	Chemistry I	3
or BIOL 1308	Survey of Life Science	
PHYS 2325	University Physics I	3
Language, Philosophy, and Culture		
ENG 2XX [3]		3
Creative Arts [4]		
Select one of the following:		
MUSI XXX or ART(S) XXX or THEA XXX		3
American History		
HIST 1301	Soc & Pol Hist US to 1877	3
HIST 1302	Soc & Pol Hist US Since 1877	3
Government/Political Science		
POLS 2305	American Government	3
POLS 2306	Texas Government	3
Social and Behavioral Sciences [5]		
Select one of the following:		
PSYC 2301 or SOCI XXXX or ECON XXXX or GEOG 1303		3
Institutional Options		
COMM 1321	Business & Professional Comm	3
or COMM 1315	Public Address	
Select one of the following:		3
COSC 1301	Intro To Compr Science I	
EDCI 210	Ins Tec	
ECON 2301	Principles Of Economics I	
MIS 204	Fundamentals of Info Systems	
Or, one additional course from the Mathematics, Life and Physical Sciences, Language, Philosophy & Culture, Creative Arts, American History, Social & Behavioral Sciences courses listed above.		
Total Hours		**43**

MAJOR (MATHEMATICS)

Code	Title	Hours
MATH 2414	Calculus&Analytic Geometry II	4
MATH 243	Calculus & Analytic Geo III	4
MATH 250	Linear Algebra	3
MATH 251	Differential Equations	3
MATH 331	Foundations of Mathematics	3
MATH 336	Introduction to Abstract Algebra	3
MATH 439	Introduction to Analysis	3
MATH 473	Probability & Statistics I	3
MATH 498	Capstone Courses in Math	3
Math Electives		
MATH 3XX or 4XX [1]		12
Total Hours		**41**

1

Select Math Electives from the Electives list below.

ELECTIVES

Code	Title	Hours
MATH 335	Foundations Of Geometry	3
MATH 3338	Introduction To Probability	3
MATH 3339	Statistics For Sciences	3
MATH 376	Applied Mathematical Analysis	3
MATH 430	The History Of Mathematics	3
MATH 431	Software for Scientific Computing	3
MATH 460	Intro To Complex Analysis	3
MATH 461	Introduction to Partial Differential Equations	3
MATH 462	Intro To Topology	3
MATH 463	Introduction to Numerical Analysis	3
MATH 465	Introduction to Data Science and Machine Learning	3
MATH 471	Topics In Math I	3
MATH 474	Probability & Statistics II	3
MATH 475	Abstract Algebra	3
MATH 490	Independent Study Undergrad	3
MATH 499	Seminar	3

OTHER REQUIREMENTS

Code	Title	Hours
CS 120	Introduction to Programming Using C++	3
CS 124	Fund Machine Computation	3
PHYS 252	University Physics II	3
PHYS 217	University Physics Laboratory I	1
PHYS 218	University Physics Laboratory II	1
FS 102	Freshman Seminar/ first Year Experience	1

Approved Electives (See Advisor)	12
Total Hours	**24**

DATA SCIENCE CONCENTRATION

Code	Title	Hours
MATH 332	Introduction to Graph Theory	3
MATH 3339	Statistics For Sciences	3
MATH 465	Introduction to Data Science and Machine Learning	3
MATH 466	Introduction to Data Science and Statistics Learning	3
Total Hours		**12**

Course	Title	Hours
First Year		
First Semester		
ENGL 1301	Freshman English I [1]	3
MATH 2413	Calculus & Analytic Geomtry I [2]	4
COSC 1301	Intro To Compr Science I	3
COMM 1321 or COMM 1315	Business & Professional Comm or Public Address	3
FS 102	Freshman Seminar/ first Year Experience	1
HIST 1301	Soc & Pol Hist US to 1877	3
	Hours	**17**
Second Semester		
ENGL 1302	Freshman English II	3
MATH 2414	Calculus&Analytic Geometry II	4
Social and Behavioral Science [3]		3
CHEM 1311 or BIOL 1308	Chemistry I or Survey of Life Science	3
HIST 1302	Soc & Pol Hist US Since 1877	3
	Hours	**16**
Second Year		
Third Semester		
ENG 2XX	Any 200-level English [4]	3
MATH 243	Calculus & Analytic Geo III	4
PHYS 2325	University Physics I	3
PHYS 217	University Physics Laboratory I	1
POLS 2305	American Government	3
MATH 250	Linear Algebra	3
	Hours	**17**
Fourth Semester		
MATH 251	Differential Equations	3
MATH 331	Foundations of Mathematics	3
PHYS 252	University Physics II	3
PHYS 218	University Physics Laboratory II	1
POLS 2306	Texas Government	3
CS 124	Fund Machine Computation	3
	Hours	**16**
Third Year		
Fifth Semester		
MATH 3338	Introduction To Probability	3
MATH 336	Introduction to Abstract Algebra	3
MATH 439	Introduction to Analysis	3
MATH Elective	(MATH 3XX or MATH 4XX)	3
CS 120	Introduction to Programming Using C++	3
	Hours	**15**
Sixth Semester		
Creative Arts		3
MATH 332	Introduction to Graph Theory	3
MATH Elective	(MATH 3XX or MATH 4XX) [6]	3
ELECTIVE	Advisor approved course	3
	Hours	**12**
Fourth Year		
Seventh Semester		
MATH 465	Introduction to Data Science and Machine Learning	3
MATH 473	Probability & Statistics I	3
MATH ELECTIVE	MATH 3XX or 4XX [6]	6
ELECTIVE	Advisor approved course	3
	Hours	**15**
Eighth Semester		
MATH 466	Introduction to Data Science and Statistics Learning	3
MATH 498	Capstone Courses in Math	3
ELECTIVE	Advisor approved courses	6
	Hours	**12**
	Total Hours	**120**

1

Pending acceptable scores on English and Math Placement Exams

2

MATH 2413 Calculus & Analytic Geomtry I will be used to satisfy the mathematics core requirement for mathematics majors only.

3

PSYC 2301 General Psychology, SOCI 1301 Introduction To Sociology, SOCI 1306 Contemporary Social Issues, SOCI 2306 Soc Of Human Sexuality, SOCI 2346 Introduction To Anthropology, ECON 2301 Principles Of Economics I or ECON 2302 Principles Of Economics II

4

ENGL 2332 World Literature I, ENGL 2333 World Literature II, ENGL 2326 American Literature, or ENGL 2328 African-American Literature (TCCN: ENGL 2332, ENGL 2333, ENGL 2326, or ENGL 2326)

5

MUSI 1306 Music Appreciation, MUSI 1315 Fine Arts In Daily Living, THEA 1310 Introduction to Theatre, ART 135 Topics in Contemp Art & Cultur, ARTS 1315 Intro African Art (TCCN: MUSI 1306, HUMA 1315, DRAM 1310, ARTS 1301, or HUMA 2323).

6

Math Electives may be selected from MATH 335 Foundations Of Geometry, MATH 345 Applied Mathematics and Statistics for Scientists and Engineers, MATH 376 Applied Mathematical Analysis, MATH 430 The History Of Mathematics, MATH 431 Software for Scientific Computing, MATH 460 Intro To Complex Analysis, MATH 461 Introduction to Partial Differential Equations, MATH 462 Intro To Topology, MATH 463 Introduction to Numerical Analysis, MATH 465 Introduction to Data Science and Machine Learning, MATH 471 Topics In Math I, MATH 474 Probability & Statistics II, MATH 475 Abstract Algebra, MATH 490 Independent Study Undergrad, or MATH 499 Seminar.