Bachelor of Science

Data Science (BS)

Web Site: https://www.odu.edu/datascience (https://www.odu.edu/ datascience/)

Degree Program Guide

The Degree Program Guide is a suggested curriculum to complete this degree program in four years. It is just one of several plans that will w and is presented only as broad guidance to students. Each student is st encouraged to develop a customized plan in consultation with their ac advisor. Additional information can also be found in Degree Works.

Specialization Area: Artificial Intelligence and Machine Learning

Course	Title	Credit Hours
Freshman		
Fall		
ENGL 110C	English Composition (C or better required)	3
Oral Communication		3
Information Literacy and Resear	ch	3
Mathematics (MATH 162M req	uired)	3
DASC/SOC 205S	Data, Technology, Society	3
	Credit Hours	15
Spring		
ENGL 211C or ENGL 231C	Writing, Rhetoric, and Research (C or better required) or Writing, Rhetoric, and Research: Special Topics	3
Interpreting the Past		3
Human Behavior (may not use I	DASC 205S or SOC 205S)	3
MATH 163	Precalculus II	3
BDA 200T	Elements of Data Science	3
	Credit Hours	15
Sophomore		
Fall		
Nature of Science I		4
STAT 130M	Elementary Statistics	3
CS 153	Introduction to Programming with Python	4
CS 252	Introduction to Unix for Programmers	1
Language & Culture I (if needed) or General Elective	3
	Credit Hours	15
Spring		
Nature of Science II		4
CS 251	Programming with Java	4
MATH 211	Calculus I	4
STAT 310	Introductory Data Analysis	3
	Credit Hours	15
Junior		
Fall		
DASC 300	Foundations of Data Science	3

	IT 360T	Principles of Information Technology	3
	CS 361	Data Structures and Algorithms	3
	CS 480 or MSIM 480	Introduction to Artificial Intelligence or Introduction to Artificial Intelligence	3
	Language & Culture II (if r	needed) or General Elective	3
		Credit Hours	15
is work	Spring		
strongly	DASC/PHIL 357E	Ethics and Data	3
cademic	IT 450	Database Concepts	3
	MATH 212	Calculus II	4
	BDA 411 or CS 422	Introduction to Machine Learning or Introduction to Machine	3
dit Hours		Learning	
	General Elective		3
		Credit Hours	16
3	Senior		
	Fall		
3	Literature		3
3	DASC 434	Data Science Research Methods	3
3	Approved Area Electives		6
15	General Elective		3
		Credit Hours	15
3	Spring		
	Human Creativity		3
3	DASC 436W	Data Science Capstone Project (C or better required)	3
3	Approved Area Elective		3
3	General Electives		5
3		Credit Hours	14
15		Total Credit Hours	120
	Specialization	Area: Data Visualization	
4	Course	Title	Credit Hours
3	Freshman		
4	Fall		
4	ENGL 110C	English Composition (C or better required)	3
1	Oral Communication		3
3	Information Literacy and R	esearch	3
15	Mathematics (MATH 162M	I required)	3
	DASC/SOC 205S	Data, Technology, Society	3
4		Credit Hours	15
4	Spring		

Writing, Rhetoric, and

Precalculus II

Human Behavior (may not use DASC 205S or SOC 205S)

Research (C or better required) or Writing, Rhetoric, and Research: Special Topics

Spring ENGL 211C

or ENGL 231C

Interpreting the Past

MATH 163

3

3

3

3

	Elements of Data Science	3
	Credit Hours	15
Sophomore		
Fall		
Nature of Science I		4
STAT 130M	Elementary Statistics	3
CS 153	Introduction to Programming with Python	4
CS 252	Introduction to Unix for Programmers	1
Language & Culture I (if needed	l) or General Elective	3
	Credit Hours	15
Spring		
Nature of Science II		4
CS 251	Programming with Java	4
MATH 211	Calculus I	4
STAT 310	Introductory Data Analysis	3
	Credit Hours	15
Junior		
Fall		
DASC 300	Foundations of Data Science	3
IT 360T	Principles of Information Technology	3
CS 361	Data Structures and Algorithms	3
BNAL 206	Business Analytics I	3
Language & Culture II (if neede	d) or General Elective	3
	Credit Hours	15
Spring		
DASC/PHIL 357E	Ethics and Data	3
	Database Concepts	
IT 450		3
IT 450 GAME 201T	Introduction to Game Studies	3
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GAME 201T	Introduction to Game Studies	3
GAME 201T BNAL 306	Introduction to Game Studies	3
GAME 201T BNAL 306	Introduction to Game Studies Business Analytics II	3 3 3
GAME 201T BNAL 306 General Elective	Introduction to Game Studies Business Analytics II	3 3 3
GAME 201T BNAL 306 General Elective Senior	Introduction to Game Studies Business Analytics II	3 3 3
GAME 201T BNAL 306 General Elective Senior Fall	Introduction to Game Studies Business Analytics II	3 3 3 15
GAME 201T BNAL 306 General Elective Senior Fall Literature	Introduction to Game Studies Business Analytics II Credit Hours Data Science Research	3 3 3 15 3
GAME 201T BNAL 306 General Elective Senior Fall Literature DASC 434	Introduction to Game Studies Business Analytics II Credit Hours Data Science Research Methods Data Visualization and	3 3 3 15 3 3
GAME 201T BNAL 306 General Elective Senior Fall Literature DASC 434 BNAL 403	Introduction to Game Studies Business Analytics II Credit Hours Data Science Research Methods Data Visualization and	3 3 3 15 3 3 3
GAME 201T BNAL 306 General Elective Senior Fall Literature DASC 434 BNAL 403 Approved Area Elective	Introduction to Game Studies Business Analytics II Credit Hours Data Science Research Methods Data Visualization and	3 3 3 15 3 3 3 3 3
GAME 201T BNAL 306 General Elective Senior Fall Literature DASC 434 BNAL 403 Approved Area Elective	Introduction to Game Studies Business Analytics II Credit Hours Data Science Research Methods Data Visualization and Exploration	3 3 3 15 3 3 3 3 3 3 3 3
GAME 201T BNAL 306 General Elective Senior Fall Literature DASC 434 BNAL 403 Approved Area Elective General Elective	Introduction to Game Studies Business Analytics II Credit Hours Data Science Research Methods Data Visualization and Exploration	3 3 3 15 3 3 3 3 3 3 3 3
GAME 201T BNAL 306 General Elective Senior Fall Literature DASC 434 BNAL 403 Approved Area Elective General Elective Spring	Introduction to Game Studies Business Analytics II Credit Hours Data Science Research Methods Data Visualization and Exploration	3 3 15 3 3 3 3 3 3 15
GAME 201T BNAL 306 General Elective Senior Fall Literature DASC 434 BNAL 403 Approved Area Elective General Elective Spring Human Creativity	Introduction to Game Studies Business Analytics II Credit Hours Data Science Research Methods Data Visualization and Exploration Credit Hours Data Science Capstone Project	3 3 3 15 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3

Total Credit Hours	120
Credit Hours	15
General Elective	3

Specialization Area: Geospatial Information Systems

Systems		
Course	Title	Credit Hours
Freshman		
Fall		
ENGL 110C	English Composition (C or better required)	3
Oral Communication		3
Information Literacy and Res	earch	3
Mathematics (MATH 162M	required)	3
DASC/SOC 205S	Data, Technology, Society	3
Spring	Credit Hours	15
ENGL 211C or ENGL 231C	Writing, Rhetoric, and Research (C or better required) or Writing, Rhetoric, and Research: Special Topics	3
Interpreting the Past		3
Human Behavior (may not us	e DASC 205S or SOC 205S)	3
MATH 163	Precalculus II	3
BDA 200T	Elements of Data Science	3
	Credit Hours	15
Sophomore		
Fall		
Nature of Science I		4
CS 153	Introduction to Programming with Python	4
STAT 130M	Elementary Statistics	3
GEOG 102T	Digital Earth: Geospatial Technology and Society	3
Elective		1
Spring	Credit Hours	15
Nature of Science II		4
CS 251	Programming with Java	4
STAT 310	Introductory Data Analysis	3
Elective(s)	introductory Data Milaysis	4
	Credit Hours	15
Junior	Creat Hours	15
Fall		
DASC 300	Foundations of Data Science	3
IT 360T	Principles of Information	3
GEOG 402	Technology Geographic Information Systems	3
GEOG 404	Digital Techniques for Remote Sensing	3
Language & Culture I (if nee	-	3
	Credit Hours	15

Credit Hours

Data Science (BS)

15

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Spring

IT 450Database Concepts3GEOG 419Spatial Analysis of Coastal Environments3GEOG 425Internet Geographic Information Systems3Language & Culture II (in eced-or General Elective3SeniorTedit Hours15Fal3Literature3DASC 434Data Science Research Methods3GEOG 432Advanced GIS3GEOG 462Advanced GIS3GEOG 462Advanced GIS3GEOG 462Science Capstone Project Cor better required)3DASC 436WData Science Capstone Project Cor better required)3GEOG 463GIS Programming3GEOG 473Geographic Informations3GEOG 473Geographic Informations3GEOG 473Geographic Informations3GEOG 473Geographic Informations3GEOG 473Geographic Informations3Elective33Furture33GEOG 473Geographic Informations3Elective33Elective33Furture33Geographic Informations3GEOG 473Geographic Informations3Elective33Furture33GEOG 405Geographic Informations3GEOG 473Geographic Informations3GEOG 473Geographic Informations3GEOG 473Geographic Informatio		Total Credit Hours	120
GEOG 419 Spatial Analysis of Coastal Environments 3 GEOG 425 Internet Geographic Information Systems 3 Language & Culture II (if needed) or General Elective 3 Kenior 7 Fal 7 Literature 3 DASC 434 Data Science Research Methods 3 GEOG 462 Advanced GIS 3 GEOG 462 Advanced Spatial Analysis 3 GEOG 462 Gabarce Capstone Project (C or better required) 3 GEOG 463 GIS Programming 3 GEOG 463 GIS Programming 3 GEOG 463 Geographic Information Systems for Emergency Management 3		Credit Hours	15
GEOG 419 Spatial Analysis of Coastal Environments 3 GEOG 425 Internet Geographic Information Systems 3 Language & Culture II (if needed) or General Elective 3 Credit Hours Senior Fal Literature 3 DASC 434 Data Science Research Methods 3 GEOG 432 Advanced GIS 3 GEOG 462 Advanced Spatial Analysis 3 GEOG 462 Advanced Spatial Analysis 3 GEOG 462 Advanced Patial Analysis 3 Muthor Creativity 3 3 DASC 436W Data Science Capstone Project (C or better required) 3 GEOG 463 GIS Programming 3 GEOG 473 Geographic Information Systems for Emergency 3	Elective		3
GEOG 419 Spatial Analysis of Coastal Environments 3 GEOG 425 Internet Geographic Information Systems 3 Language & Culture II (if needed) or General Elective 3 Credit Hours Senior Fall Literature 3 DASC 434 Data Science Research Methods 3 GEOG 422 Advanced GIS 3 GEOG 432 Advanced Spatial Analysis 3 GEOG 462 Advanced Spatial Analysis 3 GEOG 462 Advanced Patial Analysis 3 GEOG 462 Advanced Spatial Analysis 3 Spring 3 3 Muma Creativity 3 Advance Capstone Project 3 <td>GEOG 473</td> <td>Systems for Emergency</td> <td>3</td>	GEOG 473	Systems for Emergency	3
GEOG 419 Spatial Analysis of Coastal Environments 3 GEOG 425 Internet Geographic Information Systems 3 Language & Culture II (if needed) or General Elective 3 Credit Hours 15 Senior 15 Fal 3 DASC 434 Data Science Research Methods 3 GEOG 462 Advanced GIS 3 GEOG 462 Advanced Spatial Analysis 3 GEOG 462 Advanced Spatial Analysis 3 Elective 3 3 Muman Creativity 3 3 DASC 436W Data Science Capstone Project 3	GEOG 463	GIS Programming	3
GEOG 419 Spatial Analysis of Coastal Environments 3 GEOG 425 Internet Geographic Information Systems 3 Language & Culture II (if needed) or General Elective 3 Credit Hours 15 Senior 15 Fall 3 DASC 434 Data Science Research Methods 3 GEOG 425 Advanced GIS 3 GEOG 462 Advanced Spatial Analysis 3 GEOG 462 Advanced Spatial Analysis 3 Elective 3 3 Fordit Hours 15	DASC 436W		3
GEOG 419 Spatial Analysis of Coastal Environments 3 GEOG 425 Internet Geographic Information Systems 3 Language & Culture II (if needed) or General Elective 3 Credit Hours 15 Senior 15 Fal 3 DASC 434 Data Science Research Methods 3 GEOG 432 Advanced GIS 3 GEOG 432 Advanced Spatial Analysis 3 Elective 3	Human Creativity		3
GEOG 419 Spatial Analysis of Coastal Environments 3 GEOG 425 Internet Geographic Information Systems 3 Language & Culture II (if needed) or General Elective 3 Credit Hours Senior Fall Literature 3 DASC 434 Data Science Research Methods 3 GEOG 422 Advanced GIS 3 GEOG 462 Advanced Spatial Analysis 3 GEOG 462 Advanced Spatial Analysis 3	Spring		
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GEOG 419 Spatial Analysis of Coastal Environments 3 GEOG 425 Internet Geographic Information Systems 3 Language & Culture II (if needed) or General Elective 3 Credit Hours 15 Senior 15 Fall 3 Literature 3 DASC 434 Data Science Research 3	GEOG 432	Advanced GIS	3
GEOG 419 Spatial Analysis of Coastal Environments 3 GEOG 425 Internet Geographic Information Systems 3 Language & Culture II (if needed) or General Elective 3 Credit Hours 15 Senior Fall	DASC 434		3
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GEOG 419 Spatial Analysis of Coastal Environments 3 GEOG 425 Internet Geographic Information Systems 3 Language & Culture II (if needed) or General Elective 3	Senior		
GEOG 419 Spatial Analysis of Coastal Environments 3 GEOG 425 Internet Geographic Information Systems 3		Credit Hours	15
GEOG 419 Spatial Analysis of Coastal Environments 3 GEOG 425 Internet Geographic 3	Language & Culture II (if needed	l) or General Elective	3
GEOG 419 Spatial Analysis of Coastal 3	GEOG 425		3
IT 450 Database Concepts 3	GEOG 419		3
	IT 450	Database Concepts	3
DASC/PHIL 357E Ethics and Data 3	DASC/PHIL 357E	Ethics and Data	3