

Data Science and International Affairs, BS

Overview

This combined degree offers both a strong data science foundation and an interdisciplinary understanding of global affairs and international issues. Students study the collection, manipulation, storage, retrieval, and computational analysis of data in its various forms, including numeric, textual, image, and video data from small to large volumes. Utilizing these skill sets allows students to address topics such as interstate relations (conflict, cooperation, hierarchies); civil society, transnational advocacy networks, global social movements; and state-society relations (democracy, authoritarianism, social justice and inequalities, citizenship). Upon graduation, students are equipped with the skills and knowledge needed to work across national cultures in fields that relate to utilizing data to address complex regional and international issues.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

Universitywide Requirements

All undergraduate students are required to complete the Universitywide Requirements (<http://catalog.northeastern.edu/undergraduate/university-academics/university-wide-requirements/>).

NUPath Requirements

All undergraduate students are required to complete the NUPath Requirements (<http://catalog.northeastern.edu/undergraduate/university-academics/nupath/>).

Data Science Courses

Code	Title	Hours
Overview		
CS 1200 or INTL 1000	First Year Seminar International Affairs at Northeastern	1
CS 1210	Professional Development for Khoury Co-op	1
Programming Sequence Pathways		
Complete one of the two options.		12
<i>Computer Science Option</i>		
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	
CS 3500 and CS 3501	Object-Oriented Design and Lab for CS 3500	
<i>Data Science Option</i>		
DS 2000 and DS 2001	Programming with Data and Data Science Programming Practicum	
DS 2500 and DS 2501	Intermediate Programming with Data and Lab for DS 2500	
DS 3500	Advanced Programming with Data	
Computer Science Required Courses		
CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 3200	Database Design	4
Data Science Foundations		
DS 3000	Foundations of Data Science	4
DS 4200	Information Presentation and Visualization	4
DS 4300	Large-Scale Information Storage and Retrieval	4
DS 4400	Machine Learning and Data Mining 1	4
Khoury Elective		
With advisor approval, directed study, research, project study, and appropriate graduate-level courses may also be taken as upper-division electives.		
Complete four credits of CS, CY, DS, or IS classes that are not already required. Choose courses within the following ranges:		4

CS 2500 or higher, except CS 5010

CY 2000 or higher, except CY 4930

DS 2500 or higher, except DS 4900

IS 2000 or higher, except IS 4900

International Affairs Requirements

Courses used to fulfill major requirements may not be used to satisfy the global dynamics requirement. See department for additional courses.

Code	Title	Hours
Required Courses		
ANTH 1101	Peoples and Cultures	4
or HIST 2211	The World Since 1945	
or HIST 2311	Colonialism/Imperialism	
INTL 1101	Globalization and International Affairs	4
INTL 2718	Research Methods in International Affairs	4
INTL 3400	International Conflict and Negotiation	4
POLS 1160	International Relations	4

International Experiential Learning

Complete at least one "international semester" via study abroad, international internship, international co-op, or two short-term programs.

International Affairs Elective

Code	Title	Hours
Complete one of the following:		4

Code	Title	Hours
INTL 2240	Global Population and Development	
INTL 2480	Women and World Politics	
INTL 2500	Race and Global Human Mobility	
INTL 3150	Global Philanthropy	
INTL 3200	Cities in a Global Context	
INTL 3430	Revolution, Civil War, and Insurrection	
INTL 3450	Security, Culture, Power	
INTL 3520	Global Political Economy	
INTL 4100	Forced Migration: Refugees, Exiles, and Displaced Persons	
INTL 5100	Climate and Development	

Global Dynamics Requirement

Code	Title	Hours
Complete two of the following with one course numbered 2000 or above. Courses are divided into thematic groups to aid students in deciding which courses to take and have no bearing on major requirements:		8

Code	Title	Hours
<i>Environment</i>		
ENVR 1110	Global Climate Change	
ENVR 2515	Sustainable Development	
INTL 5100	Climate and Development	
INTL 5268	International Environmental Policy	
or PPUA 5268	International Environmental Policy	
SOCL 1246	Environment and Society	
<i>Law, Diplomacy, and Global Governance</i>		
COMM 2303	Global and Intercultural Communication	
INTL 2480	Women and World Politics	
or WMNS 2480	Women and World Politics	
INTL 3520	Global Political Economy	
POLS 1155	Comparative Politics	

POLS 1160	International Relations
POLS 2370	Religion and Politics
POLS 3405	International Political Economy
POLS 3406	International Law
POLS 3409	Global Governance
POLS 4910	Model United Nations
<i>Human Rights and Social Justice</i>	
HIST 2373	Gender and Sexuality in World History
INTL 2480 or WMNS 2480	Women and World Politics Women and World Politics
PHIL 5001	Global Justice
<i>Conflict and Security</i>	
CRIM 3030	Global Criminology
CRIM 3060	Political Crime and Terrorism
HIST 1206	Drug Trade and Drug War: History, Security, Culture
HIST 1389	History of Espionage 1: Antiquity to World War II
HIST 1390	History of Espionage 2: Cold War Spies
HIST 3330	The Global Cold War
HIST 3334	Assassinations in World History
HIST 3335	History of Modern Terrorism
INTL 3430	Revolution, Civil War, and Insurrection
INTL 3450	Security, Culture, Power
JRNL 3300 or INTL 3300	Covering Conflicts: Peace, War, and the Media Covering Conflicts: Peace, War, and the Media
PHIL 5001	Global Justice
POLS 2282	The Holocaust and Comparative Genocide
POLS 3408	International Security
POLS 3418	Nationalism
POLS 3420	U.S. National Security Policy
POLS 3423	Terrorism and Counterterrorism
POLS 3430 or INTL 3430	Revolution, Civil War, and Insurrection Revolution, Civil War, and Insurrection
POLS 4918	Model NATO
<i>Globalization</i>	
AFAM 2600	Issues in Race, Science, and Technology
ANTH 2305	Global Markets and Local Culture
ANTH 2315	Religion and Modernity
ECON 3290	History of the Global Economy
ECON 4635	International Economics
HIST 2211	The World Since 1945
HIST 2311	Colonialism/Imperialism
INTB 3310	Cultural Aspects of International Business
INTL 2240	Global Population and Development
INTL 2480 or WMNS 2480	Women and World Politics Women and World Politics
INTL 3200	Cities in a Global Context
INTL 3520	Global Political Economy
POLS 1160	International Relations
POLS 2370	Religion and Politics
POLS 3405	International Political Economy
POLS 3406	International Law
SOCL 3465	Globalization and the Evolution of Human Societies
<i>Population, Migration, and Diaspora</i>	
AFRS 1270	Introduction to Global Health

or PHTH 1270	Introduction to Global Health
AFRS 3424	Epidemiology of Pandemic Diseases and Health Disparities in the African Diaspora
ANTH 1101	Peoples and Cultures
HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804
HIST 1219	History of Global Pandemics
INTL 2240	Global Population and Development
INTL 2500	Race and Global Human Mobility
INTL 3200	Cities in a Global Context
INTL 4100	Forced Migration: Refugees, Exiles, and Displaced Persons
PHIL 1111	Introduction to World Religions
PHIL 1271	Sex in Judaism, Christianity, and Islam
<i>Development</i>	
ANTH 2305	Global Markets and Local Culture
ECON 1291	Development Economics
ECON 3404	International Food Policy
ENTR 2206	Global Social Enterprise
ENVR 2515	Sustainable Development
INTB 1203	International Business and Global Social Responsibility
or INTB 1209	International Business and Global Social Responsibility
INTL 2240	Global Population and Development
INTL 3150	Global Philanthropy
INTL 3520	Global Political Economy
INTL 5100	Climate and Development
PHTH 5230	Global Health
POLS 3487	Politics of Developing Nations
<i>Communication and Media</i>	
COMM 2303	Global and Intercultural Communication
INTB 3310	Cultural Aspects of International Business
JRNL 3300	Covering Conflicts: Peace, War, and the Media
or INTL 3300	Covering Conflicts: Peace, War, and the Media
JRNL 5360	Global Reporting
MSCR 2325	Global Media

Regional Analysis Requirement

Code	Title	Hours
Complete two of the following, both of which must be in one region. Select courses taken during a semester study abroad or specific Dialogue of Civilizations courses may count as regional analysis courses pending approval of the international affairs head faculty advisor. See department for additional courses:		8

Code	Title	Hours
<i>Africa</i>		
AFRS 1101	Introduction to African Studies	
AFRS 2307	Africa Today	
AFRS 2900	Swahili, Culture, and Politics in Kenya	
AFRS 3460	Contemporary Government and Politics in Africa	
AFRS 4939	Community Health, Culture, and Development in Kenya	
ANTH 4510	Anthropology of Africa	
ENTR 3308	Business Economic History of South Africa	
INTL 2464	Natural Resources and Sustainable Development	
or AFRS 2464	Natural Resources and Sustainable Development	
INTL 2465	The Scope and Dynamics of Conflicts in Africa	
or AFRS 2465	The Scope and Dynamics of Conflicts in Africa	

Asia

ANTH 4350	Ethnography of Southeast Asia
ASNS 1150 or HIST 1150	East Asian Studies East Asian Studies
CLTR 1500	Modern Chinese History and Culture
CLTR 1506	Introduction to Chinese Popular Culture
CLTR 1700	Introduction to Japanese Pop Culture
HIST 1246	World War II in the Pacific
HIST 1252	Japanese Literature and Culture
HIST 1253	History of Vietnam Wars
HIST 1500	Modern Chinese History and Culture
HIST 2351	Modern Japan
PHIL 1275	Hinduism, Buddhism, and Beyond
PHIL 1290	Chinese Philosophy and Religion
PHIL 2395	Japanese Buddhism

Europe

CLTR 1501	Introduction to French Culture
CLTR 1503	Introduction to Italian Culture
CLTR 1504	Cultural History of Spain
HIST 1170	Europe: Empires, Revolutions, Wars, and Their Aftermath
HIST 1272	Europe in the Middle Ages, 500–1500
HIST 1286	History of the Soviet Union
HIST 2280	Hitler, Germany, and the Holocaust
HIST 2370	Renaissance to Enlightenment
HIST 2375	The Tudors, the Stuarts, and the Birth of Modern Britain
POLS 3435	Politics and Governance of Europe and the European Union

Latin America

ANTH 4500	Latin American Society and Development
CLTR 1240	Latin American Film
CLTR 1261	Caribbean Literature and Culture
CLTR 1505	Latin American Culture, History, and Politics
CLTR 3715	New Narratives: Latin America after 1989
CLTR 3720	Literature, Arts, and Poverty in Latin America
CLTR 4655	Latin American Literature
HIST 2025	Latin American History through Film
LACS 1220	Latino, Latin American, and Caribbean Studies

Middle East

CLTR 1502	Introduction to Arabic Culture
ECON 1292	Economic History of the Middle East
HIST 1185	Introduction to Middle Eastern History
HIST 1290	Modern Middle East
INTL 1150	The Mediterranean World: An Overview
INTL 1160	Middle East Studies
INTL 2200	America and the Middle East
INTL 3250	Democracy and Development in North Africa and the Mediterranean
PHIL 1280	Islam: Rituals, Traditions, and Debates
PHIL 1285	Jewish Religion and Culture
POLS 3465	Government and Politics in the Middle East
POLS 3470	Arab-Israeli Conflict

English Requirement

Code	Title	Hours
College Writing		
ENGW 1111	First-Year Writing	4

or ENGW 1102	First-Year Writing for Multilingual Writers	
Advanced Writing in the Disciplines		
Complete one of the following:		4
ENGW 3302	Advanced Writing in the Technical Professions	
ENGW 3308	Advanced Writing in the Social Sciences	
ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Supporting Courses

Code	Title	Hours
Mathematics		
ECON 2350	Statistics	4
MATH 1341	Calculus 1 for Science and Engineering	4

Integrative Requirements

Code	Title	Hours
Senior Seminar		
Complete with a thesis or project that integrates both international affairs and data science:		
INTL 4700	Senior Capstone Seminar in International Affairs	4
Digital Ethics		
CY 4170	The Law, Ethics, and Policy of Data and Digital Technologies	4

Required General Electives

Code	Title	Hours
Complete 24 credits of general electives.		24

Khoury College GPA Requirement

Minimum 2.000 GPA required in all CS, CY, DS, and IS courses

Program Requirement

131 total semester hours required

Plan of Study

Four Years, Two Co-ops in Summer 2/Fall

Year 1								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	Hours
CS 1200		1 ANTH 1101		4 CS 3200		4 MATH 1341		4
CS 1800 and CS 1802		5 DS 2500 and DS 2501		5 Elective		4 INTL elective		4
DS 2000 and DS 2001		4 POLS 1160		4				
ENGW 1111		4 INTL elective		4				
INTL 1101		4						
		18			17			8
								8
Year 2								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	Hours
DS 3000		4 CS 1210		1 Elective (Dialogue of Civilizations possible)		4 Co-op		0
DS 3500		4 DS 4200		4 Elective (Dialogue of Civilizations possible)		4		
INTL elective		4 ECON 2350		4				
Khoury elective		4 INTL 2718		4				
		INTL elective		4				
		16			17			8
								0

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		0 DS 4300		4 Elective (Dialogue of Civilizations possible)		4 Co-op	0
		ENGW 3302		4 Elective (Dialogue of Civilizations possible)		4	
		INTL 3400		4			
		INTL elective		4			
		0		16		8	0
Year 4							
Fall	Hours	Spring	Hours				
Co-op		0 CY 4170		4			
		DS 4400		4			
		INTL 4700		4			
		Elective		4			
		0		16			

Total Hours: 132