Data Science and International Affairs, BS (Boston)

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 (https://catalog.northeastern.edu/undergraduate/university-academics/university-wide-requirements/).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (https://catalog.northeastern.edu/undergraduate/university-academics/nupath/).

Data Science Courses

Code	Title	Hours
Overview		
Must be taken in alignment with your home college:		
CS 1200	First Year Seminar	1
or INTL 1000	International Affairs at Northeastern	
CS 1210	Professional Development for Khoury Co-op	1
Computer Science Required Courses		
All students can take a self-assessment to attempt to place out of CS 2000 and CS 2001. Students who place out of CS 2000 and CS 2001 will instead substitute 4-5 semester hours of CS, CY, or DS coursework at the 3000 level or higher not otherwise required in the degree.		
CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2000 and CS 2001	Introduction to Program Design and Implementation and Lab for CS 2000	5
CS 3200	Introduction to Databases	4
Programming Sequence Pathways		
Complete one of the two options:		9
Computer Science Option		
CS 2100 and CS 2101	Program Design and Implementation 1 and Lab for CS 2100	
CS 3100 and CS 3101	Program Design and Implementation 2 and Lab for CS 3100	
Data Science Option		
DS 2500 and DS 2501	Intermediate Programming with Data and Lab for DS 2500	
DS 3500	Advanced Programming with Data	
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 Approved Electives		

With advisor approval, directed study, research, project study, and appropriate graduate-level courses may also be taken as upper-division electives.		
Complete 4 semester hours from within the following options:		4
CS 2500 or higher, except CS 5010		
CY 2000 or higher, except CY 4930		
DS 2500 or higher, except DS 4900		
MKTG 4606	Digital, Analytics, Technology, and Automation Research Practicum	4

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.		

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
Environment		
ENVR 1110	Global Climate Change	
ENVR 2515	Sustainable Development	
ENVR 3150	Food Security and Sustainability	
INTL 5100	Climate and Development	
INTL 5268	International Environmental Policy	
or PPUA 5268	International Environmental Policy	
PPUA 5267	Climate Policy and Justice	
SOCL 1246	Environment and Society	
Law, Diplomacy, and Global Governance		
ANTH 3442	Anthropology of Law	
COMM 2303	Global and Intercultural Communication	
HIST 1100	Law and History	
INTL 2480	Women and World Politics	
or WMNS 2480	Women and World Politics	
INTL 2600	Artificial Intelligence and World Politics	
INTL 3520	Global Political Economy	
INTL 5010	International Human Rights Law and Policy	
POLS 1155	Comparative Politics	
POLS 1160	International Relations	
POLS 2370	Religion and Politics	
POLS 3405	International Political Economy	
POLS 3406	International Law	
POLS 4910	Model United Nations	
Human Rights and Social Justice		

AFCS 3900	Gender and Black World Literatures
AFCS 4526	Afro-Asian Relations in the Americas
ANTH 3100	Gender, Social Justice, and Transnational Activism
or POLS 3100	Gender, Social Justice, and Transnational Activism
HIST 2303	Gender and Reproductive Justice
HIST 2373	Gender and Sexuality in World History
INTL 2480	Women and World Politics
or WMNS 2480	Women and World Politics
INTL 5010	International Human Rights Law and Policy
PHIL 5001	Global Justice
Conflict and Security	
CRIM 3030	Global Criminology
CRIM 3060	Political Crime and Terrorism
CRIM 5203	Security in the 21st Century
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 2217	The Global Far-Right since 1945: Politics, Culture, Violence
HIST 3330	The Global Cold War
HIST 3334	Assassinations in World History
INTL 3430	Revolution, Civil War, and Insurrection
INTL 3450	Security, Culture, Power
JRNL 3300	Covering Conflicts: Peace, War, and the Media
or INTL 3300	Covering Conflicts: Peace, War, and the Media
PHIL 5001	Global Justice
POLS 2282	The Holocaust and Comparative Genocide
POLS 3418	Nationalism
POLS 3420	U.S. National Security Policy
POLS 3423	Terrorism and Counterterrorism
POLS 3430	Revolution, Civil War, and Insurrection
or INTL 3430	Revolution, Civil War, and Insurrection
POLS 4918	Model NATO
Globalization	
AFCS 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 3635	International Economics
HIST 1215	Origins of Today: Historical Roots of Contemporary Issues
HIST 2211	The World Since 1945
HIST 2311	Colonialism/Imperialism
INTB 3310	Cultural Aspects of International Business
INTL 2480	Women and World Politics
or WMNS 2480	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
Population, Migration, and Diaspora	
AFCS 1101	Introduction to African American and Africana Studies
AFCS 1270	Introduction to Global Health
or PHTH 1270	Introduction to Global Health

AFCS 3424	Epidemiology of Pandemic Diseases and Health Disparities in the African Diaspora
ANTH 1101	Peoples and Cultures
ANTH 4220	South Asian Diasporas
CRIM 1400	Human Trafficking
HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804
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
POLS 2359	Immigration Politics
Development	
ANTH 2305	Global Markets and Local Culture
ECON 3291	Development Economics
ECON 3404	International Food Policy
ECON 3405	A Critique of Capitalism
ECON 5650	Economic Growth and Applications
ENVR 2515	Sustainable Development
HIST 2011	Capitalism and Business: A Global History
INNO 2206	Global Social Enterprise
INTB 1203	International Business and Global Social Responsibility
or INTB 1209	International Business and Global Social Responsibility
INTL 3150	Global Philanthropy
INTL 3520	Global Political Economy
INTL 5100	Climate and Development
PHTH 5230	Global Health
POLS 3487	Politics of Developing Nations
Communication and Media	
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
LANG 3600	Language Policy
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
Africa		
AFCS 2410	Possession, Sacrifice, and Divination in African Diasporic Religions	
AFCS 2900	Swahili, Culture, and Politics in Kenya	
AFCS 4939	Community Health, Culture, and Development in Kenya	
ANTH 4510	Contemporary Issues in Global Africa	
HIST 2390	Africa and the World in Early Times	
or AFCS 2390	Africa and the World in Early Times	
INNO 3308	Business Economic History of South Africa	
MUSC 1128	Music of Africa	

Asia

ANTH 4350	Ethnography of Southeast Asia
ANTH 4410	Neoliberalism in Asia
ANTH 4515	Culture and Politics in Modern India
ASNS 1150	East Asian Studies
or HIST 1150	East Asian Studies
HIST 1246	World War II in the Pacific
HIST 1252	Japanese Literature and Culture
HIST 1253	History of Vietnam Wars
HIST 1500	Modern China
HIST 2351	Modern Japan
JPNS 1260	Japanese Film
JPNS 1700	Introduction to Japanese Pop Culture
PHIL 1275	Hinduism, Buddhism, and Beyond
PHIL 1290	Chinese Philosophy and Religion
PHIL 2395	Japanese Buddhism
POLS 3485	China: Governance and Foreign Policy

Europe

ANTH 4210	Anthropology of Eastern Europe
FRNH 1501	Introduction to French Culture
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 2370	Renaissance to Enlightenment
HIST 2375	The Tudors, the Stuarts, and the Birth of Modern Britain
HIST 2388	World War II in Eastern Europe
INTL 3455	Russian Foreign Policy
or POLS 3455	Russian Foreign Policy
POLS 3435	Politics and Governance of Europe and the European Union
SPNS 1504	Cultural History of Spain

Latin America

AFCS 2330	Afro-Latin American Studies
ANTH 4500	Latin American Society and Development
HIST 1187	Introduction to Latin American History
HIST 2025	Latin American History through Film
LACS 1220	Latino, Latin American, and Caribbean Studies
SPNS 1240	Latin American Film
SPNS 1505	Latin American Culture, History, and Politics
SPNS 3240	Social Justice in Latin American and Latinx Film
SPNS 3715	New Narratives: Latin America after 1989
SPNS 3720	Literature, Arts, and Poverty in Latin America
SPNS 4655	Latin American Literature

Middle East

ARAB 1502	Introduction to Arab Culture
ECON 1292	Economic History of the Middle East
HIST 1185	Introduction to Middle Eastern History
INTL 1150	The Mediterranean World: An Overview
INTL 1160	Middle East Studies
INTL 2100	Modern Israel
INTL 2200	America and the Middle East
PHIL 1280	Islam: Rituals, Traditions, and Debates
PHIL 1285	Jewish Religion and Culture
POLS 3465	Government and Politics in the Middle East

International Affairs Elective

Code	Title	Hours
Complete one of the following:		4

Code	Title	Hours
INTL 2480	Women and World Politics	
INTL 2500	Race and Global Human Mobility	
INTL 2600	Artificial Intelligence and World Politics	
INTL 3150	Global Philanthropy	
INTL 3200	Cities in a Global Context	
INTL 3350	Borders and Racial Security	
INTL 3406	International Law	
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 5010	International Human Rights Law and Policy	
INTL 5100	Climate and Development	

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 for Economists	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 semester hours of general electives.		24

Khoury College GPA Requirement

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

Program Requirement

131 total semester hours required

Plan of Study
Sample Plans of Study

FOUR YEARS, TWO CO-OPS IN SUMMER SECOND HALF/FALL

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	ANTH 1101, HIST 2211, or HIST 2311	4	CS 3200	4	General Elective	4
CS 1800 and CS 1802	5	DS 2500 and DS 2501	5	ECON 2350	4	General Elective	4
CS 2000 and CS 2001	5	POLS 1160	4				
ENGW 1111	4	MATH 1341	4				
INTL 1101	4						
	19		**17**		**8**		**8**

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	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		4
Global Dynamics Course 1	4	INTL 2718	4				
International Affairs Elective	4	Regional Analysis Requirement 1	4				
		Khoury 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
		INTL 3400	4	Elective (Dialogue of Civilizations possible)	4		4
		Global Dynamics Course 2	4				
		Regional Analysis Requirement 2	4				
	0		**16**		**8**		**0**

Year 4

Fall	Hours	Spring	Hours
Co-op	0	CY 4170	4
ENGW 3302, 3308, or 3315	4	DS 4400	4
		INTL 4700	4
		Regional Analysis Requirement 3	4
	4		**16**

Total Hours: 137

FOUR YEARS, TWO CO-OPS IN SPRING/SUMMER FIRST HALF

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	ANTH 1101, HIST 2211, or HIST 2311	4	CS 3200	4	General Elective	4
CS 1800 and CS 1802	5	DS 2500 and DS 2501	5	ECON 2350	4	General Elective	4
CS 2000 and CS 2001	5	POLS 1160	4				
ENGW 1111	4	MATH 1341	4				

INTL 1101	4						
	19		**17**		**8**		**8**

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1210	1	Co-op	0	Co-op	0	Elective (Dialogue of Civilizations possible)	4
DS 3000	4					Elective (Dialogue of Civilizations possible)	4
DS 3500	4						
Global Dynamics Course 1	4						
International Affairs Elective	4						
	17		**0**		**0**		**8**

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
DS 4200	4	Co-op	0	Co-op	0	Elective (Dialogue of Civilizations possible)	4
INTL 2718	4	ENGW 3302, 3308, or 3315	4			Elective (Dialogue of Civilizations possible)	4
Regional Analysis Requirement 1	4						
Khoury Elective	4						
	16		**4**		**0**		**8**

Year 4

Fall	Hours	Spring	Hours
DS 4300	4	CY 4170	4
INTL 3400	4	DS 4400	4
Global Dynamics Course 2	4	INTL 4700	4
Regional Analysis Requirement 2	4	Regional Analysis Requirement 3	4
	16		**16**

Total Hours: 137