DATA SCIENCE MINOR REQUIREMENTS

The Data Science minor introduces liberal arts and science majors to a rapidly growing field and equips them with marketable problem solving skills and strategies needed to confront diverse analytic challenges.

The curriculum of the minor is firmly rooted in interdisciplinary education and covers conceptual, computational, and quantitative methods used to distill valuable patterns from the abundance of data that surrounds us. Through coursework, hands-on training, and experiential learning, students will become aware of the challenges and opportunities inherent in successful data analysis. In addition, students will learn the central role that well crafted narrative plays in real-world data science and the ethical conundrums that often attend acquisition and processing of information and application of insights, once gained.

Resume-building skills garnered through completion of this minor are marketable in diverse fields including but not limited to engineering, computer science, medicine, natural and social science, professional and amateur sports, public health and welfare, and race, ethnic, and gender studies.

Code	Title	Units
Minor Requirements		
COMPSCI 170	INTRODUCTION TO PYTHON PROGRAMMING	3
COMPSCI 180	DATA SCIENCE FOR EVERYONE	3
COMPSCI 181	INTRODUCTION TO DATABASE AND THE WEB	3
COMPSCI 312	INTERMEDIATE DATA SCIENCE	3
or BIOLOGY 312	INTERMEDIATE DATA SCIENCE	
Ethical and Legal Context:		**3**
LIBST 350	TECHNOLOGY AND SOCIAL RESPONSIBILITY	
PHILSPHY 245	CONTEMPORARY MORAL ISSUES	
PHILSPHY 246	BUSINESS ETHICS	
POLISCI 416	THE CONSTITUTION AND CIVIL RIGHTS	
Communication Proficiency:		**3**
COMM 240	SPEAKING FOR SUCCESS	
COMM 242	TEAMWORK, COLLABORATION, AND COMMUNICATION	
COMM 345	PERSUASION	
PWP 320	STYLE: PRINCIPLES AND PRACTICES	
PWP 332	WRITING FOR THE WEB	
PWP 371	WRITING IN THE SCIENCES	
PWP 372	TECHNICAL AND PROFESSIONAL WRITING	
Data Science Electives: Select one course from one group		**3-5**
A. Applications of Data Science Methods to Specific Fields		
BIOLOGY 220	INTRODUCTION TO EPIDEMIOLOGY	
or PUBHLTH 220	INTRODUCTION TO EPIDEMIOLOGY	
BIOLOGY 448	BIOINFORMATICS	
or COMPSCI 448	BIOINFORMATICS	
GEOGRPY 270	GIS I: MAPPING OUR WORLD	
GEOGRPY 340	ECONOMIC GEOGRAPHY	
GEOGRPY 370	GIS II: APPLICATIONS AND DATA	
ITSCM 382	DATA VISUALIZATION AND STORYTELLING IN BUSINESS	
POLISCI 330	PUBLIC POLICY ANALYSIS AND ADVOCACY	
POLISCI 342	SCIENCE POLICY AND HUMAN HEALTH	
POLISCI 343	US ENVIRONMENTAL POLITICS AND POLICY	
PSYCH 416	ADVANCED AND MULTIVARIATE DATA ANALYSIS FOR THE LIFE SCIENCES	
or BIOLOGY 416	ADVANCED AND MULTIVARIATE DATA ANALYSIS FOR THE LIFE SCIENCES	
SOCIOLGY 476	METHODS OF SOCIAL RESEARCH	
B. Additional Analytic Preparation for Select Graduate Programs		
COMPSCI 332	INTRODUCTION TO ARTIFICIAL INTELLIGENCE	
COMPSCI 366	DATABASE MANAGEMENT SYSTEMS	
MATH 250	APPLIED CALCULUS SURVEY FOR BUSINESS AND SOCIAL SCIENCES	
MATH 253	CALCULUS AND ANALYTIC GEOMETRY I	
MATH 355	MATRICES AND LINEAR ALGEBRA	
PHILSPHY 251	LOGIC	
At least 6 total units must be earned in courses numbered 300 or higher [1]		
Total Units		**21-23**

Code	Title	Units
Unique Requirements:		
Foundational Mathematical Skills:		**3-5**
MATH 142	COLLEGE ALGEBRA	
MATH 143	FINITE MATHEMATICS FOR BUSINESS AND SOCIAL SCIENCES	
MATH 152	PRECALCULUS	
Foundational Statistical Skills:		**3-4**
BIOLOGY 303	BIOSTATISTICS	
ECON 245	BUSINESS STATISTICS	
PSYCH 215	BASIC STATISTICAL METHODS	
SOCIOLGY 295	BASIC SOCIAL STATISTICS	
SOCWORK 250	STATISTICS FOR SOCIAL WORK	
STAT 230	INTRODUCTION TO STATISTICAL REASONING AND ANALYSIS	
STAT 342	APPLIED STATISTICS	
Total Units		**6-9**

[1] This includes COMPSCI 312 or BIOLOGY 312.