Interdisciplinary Data Science Minor Information Handout

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"Data Science Minor" contains six course (18 Credits), offered jointly by the Center for Applied Data Science (CADS) and Department of Computer Science at WSSU. This Minor would be available to all majors across WSSU starting from Fall 2021.

Rationale: Data Science is an inherently interdisciplinary field. The growth of Data Science is directly connected to the rise of large data sets across nearly every topic domain. The sciences, social sciences, business, humanities, and engineering all are seeing prospects for discovery and decision-making enhanced by unprecedented amounts of raw or structured data. The data is too large to allow effective human analysis without the automation of processes. Data Science is the field that brings together domain data, computer science, and the statistical tools for interrogating the data and extracting useful information. A recent entry-level job market analysis shows liberal arts graduates with data-analysis skills have access to 137,000 more jobs and an average increase in salary of $12,700 over those without such skills.

Format: Students who minor in data science at WSSU are required to take two foundation courses in Data Science, one foundation course in Statistics and any 9 Cr. Hours worth of courses from the approved list of courses (as below) or other courses as approved by the Program Coordinator. These electives have touchpoints across many academic departments, including biology, computer science, healthcare management, economics, business, social studies, mathematics, management, marketing etc.

Expected Skillset: After completing the minor, students will possess the below data science skills

- Data Acquisition and management: collect, store, preserve, manage and share data and gain hands-on experience with programming languages and big data tools.
- Data Analysis: develop a basic understanding of the key technologies in data science: data cleaning, data mining, visualization techniques, predictive modeling, and statistics.
- Domain knowledge: experience discipline-specific data-based use cases to solve real-world problems.
- Interpretation and Communication: learn and communicate methods for effective data representation and visualization.
- Social good: explore social and ethical implications of the use of data and technology.

Foundation Courses

- Introduction to Data Science (CSC 1315) (Fall Course)
- Applied Data Science (CSC 2315) (Spring Course)
- Statistics Course: Choose one (MAT/SOC/PSY/GER 2326, Mat 3310, QBA 2325, EXS 2310)

Breadth Courses (Choose any 9 Credits from the below list)

BIO 3305 Topics in Bioinformatics	MIS 4322 Global Electronic Commerce
BIO 4277 Investigation & Research III	QBA 3370 Business Analytics.
CHE 3236 Investigation & Research	QBA 3377 Operations Management
PHY 3233 Investigation & Research	MKT 4372 Social Media Marketing
PHY 3340 Computational Physics	MGT 4349 - Quality Management and Control
CSC/CIT 3355 Principles of Database Management	MAT: 3312 Biostatistics
CSC/CIT 4310 Big Data and Cloud Comp. Systems	MAT: 4333 Methods of Regression/Ana. of Var
CSC/CIT 4355 Database Management Sys Design	MAT: 4356 Mathematical Statistics I
CSC 4395 Artificial Intelligence	MAT: 4370 Introduction to Experimental Design
ECO 3316 Applied Econometrics and Forecasting	SOW 3302 Social Work Research
EXS 3306 Epidemiology for Public Health Practice	SOW 4302 Applied Social Work Research
GEO/JUS 4342: GIS Concepts and Techniques	JUS 4302 Research Methods in Justice Studies II
GEO 4345: Applied Urban Studies Lab	JUS 3345 Strategic Approaches to Comm. Safety
HCM 3304 Health Information Management	PSY 3402 Research Met. and Stat. in PSY
HCM 3306 Population Health	POS 3349 Meth. Behavior Found. in Political Science
HCM 4302 Health Care Policy, Org., Finance	• Directed study/Independent Study/Internship/co-op courses with approval of program coordinator.
MIS 2350 Business Intelligence Concepts	
MIS 3330 Information Systems Concepts	