

PROPOSAL FOR AN AREA OF EMPHASIS

Date: June 25, 2024

School/College: Franklin College of Arts and Sciences

Department/Division: Department of Statistics

Program (Major and Degree): Data Science (M.S.)

Area of Emphasis Title: Applied Data Science

Area of Emphasis CIP: 30700100

Which campus(es) will offer this program? Online

Proposed Effective Date: Fall 2025

Area of Emphasis Description:

The Area of Emphasis in Applied Data Science requires the completion of 30 credit hours. The program starts with an introduction to Python programming and data science, alongside foundational statistical methods using R programming. As students progress, they delve into clustering and classification algorithms, while simultaneously enhancing their knowledge of Python and data structures, establishing a strong foundation in computing. The program then provides a solid grounding in statistical modeling for data science, followed by advanced topics such as data management and SQL. Students will also master advanced R programming for data science, advanced machine learning, advanced statistical modeling, and novel applications of deep learning.

Major Requirements:

Core Courses (15 hours):

STAT 6381E, Introduction to Python and Data Science (3 hours) - NEW

STAT 6382E, Statistics for Data Science with R programming (3 hours) - NEW

CSCI 6361E, Advanced Python and Data Structures (3 hours) - NEW

STAT 6383E, Statistical Modeling in Data Science (3 hours) - NEW

STAT 6384E, Basics of Clustering and Classification Algorithms (3 hours) - NEW

Advanced Courses (15 hours):

MSIT 7510E, Data Management and SQL (3 hours) - NEW

STAT 6385E, Advanced R Programming for Data Science (3 hours) - NEW

STAT 6386E, Advanced Machine Learning and Deep Learning Methods (3 hours) - NEW

STAT 6387E, Advanced Statistical Modeling for Data Science (3 hours) - NEW

LING XXXXE, Natural Language Processing (3 hours) - NEW