



New Program Report

Date Submitted:

12/23/2020

Institution

University of Missouri-Kansas City

Site Information

Implementation Date:

8/1/2021 12:00:00 AM

Added Site(s):

Selected Site(s):

University of Missouri-Kansas City, 5100 Rockhill Road, Kansas City, MO, 64110

CIP Information

CIP Code:

307001

CIP Description:

A program that focuses on the analysis of large scale data sources from the interdisciplinary perspectives of applied statistics, computer science, data storage, data representation, data modeling, mathematics, and statistics. Includes instruction in computer algorithms, computer programming, data management, data mining, information policy, information retrieval, mathematical modeling, quantitative analysis, statistics, trend spotting, and visual analytics.

CIP Program Title:

Data Science, General

Institution Program Title:

Data Science & Analytics

Degree Level/Type

Degree Level:

Master Degree

Degree Type:

Master of Science

Options Added:

Collaborative Program:

N

Mode of Delivery

Current Mode of Delivery

Classroom

Student Preparation



**DEPARTMENT OF
HIGHER EDUCATION &
WORKFORCE DEVELOPMENT**

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Special Admissions Procedure or Student Qualifications required:

A student must have completed either a bachelor’s degree in computer science or a related field such as information technology, informatics, software engineering, mathematics, and statistics for admission. The applicant should have an overall GPA of 3.0 or better in all undergraduate work with a sound background in computer programming and mathematics. The applicant must score in at least the 75th percentile on the quantitative portion of the Graduate Record Exam (GRE).

Specific Population Characteristics to be served:

Senior undergraduates majoring in computing science, information technology, applied math, statistics, and computational engineering, and professionals in data analytics, software development, and information technology.

Faculty Characteristics

Special Requirements for Assignment of Teaching for this Degree/Certificate:

The main faculty involved in this program are from the department of Computer Science and Electrical Engineering. Dr. Md Uddin: areas of expertise include data science, big data management, distributed computing. Dr. Yugyung Lee: areas of expertise include data science, big data, and machine learning, software engineering. Dr. Dianxiang Xu: areas of expertise include data science applications, machine learning, and software engineering.

Estimate Percentage of Credit Hours that will be assigned to full time faculty:

The teaching load of each faculty member follows the SCE’s workload policy. The number of courses depend on their research activity. All of the above faculty are research active. Their teaching load will be typically 3-4 courses per academic year after the proposed program is launched.

Expectations for professional activities, special student contact, teaching/learning innovation:

COMP-SCI 5541 Data Science Lab (3 credits) is a new course under development. This course will provide students with hands-on experience in software technologies widely used by the industry.

Student Enrollment Projections Year One-Five

Year 1	Full Time: 35	Part Time: 0	
Year 2	Full Time: 77	Part Time: 0	
Year 3	Full Time: 102	Part Time: 0	Number of Graduates: 25
Year 4	Full Time: 115	Part Time: 0	
Year 5	Full Time: 115	Part Time: 0	Number of Graduates: 33

Percentage Statement:

n/a

Program Accreditation

Institutional Plans for Accreditation:

N/A. No relevant accreditation.

Program Structure

Total Credits:

30



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Residency Requirements:

n/a

General Education Total Credits:

0

Major Requirements Total Credits:

15

Course(s) Added

COURSE NUMBER	CREDITS	COURSE TITLE
COMP-SCI 5542	3	Big Data Analytics and Applications
COMP-SCI 5567	3	Machine Learning for Data Scientists
COMP-SCI 5541	3	Data Science Lab
COMP-SCI 5565	3	Introduction to Statistical Learning
COMP-SCI 5540	3	Principles of Big Data Management

Free Elective Credits:

15

Internship or other Capstone Experience:

N/A

Assurances

I certify that the program is clearly within the institution's CBHE-approved mission. The proposed new program must be consistent with the institutional mission, as well as the principal planning priorities of the public institution, as set forth in the public institution's approved plan or plan update.

I certify that the program will be offered within the proposing institution's main campus, CBHE-approved service region or CBHE-approved off-site location.

I certify that the program will not unnecessarily duplicate an existing program within the geographically applicable area.

I certify that the program will build upon existing programs and faculty expertise.

I certify that the program can be launched with minimal expense and falls within the institution's current operating budget.

I certify that the institution has conducted research on the feasibility of the proposal and it is likely the program will be successful. Institutions' decision to implement a program shall be based upon demand and/or need for the program in terms of meeting present and future needs of the locale, state, and nation based upon societal needs, and/or student needs.

Contact Information

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CHAFFIN

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UM-Kansas City M.S. Data Science & Analytics
Proposed Curriculum

A. Total credits required for graduation: 30 credit hours

B. Residency requirements, if any:
N/A

C. General education: Total credits:
N/A

Courses (specific courses OR distribution area and credits)

Course Number	Credits	Course Title

D. Major requirements: Total credits: 15 total credit hours

Course Number	Credits	Course Title
COMP-SCI 5565	3	Introduction to Statistical Learning
COMP-SCI 5540	3	Principles of Big Data Management
COMP-SCI 5542	3	Big Data Analytics and Applications
COMP-SCI 5567	3	Machine Learning for Data Scientists
COMP-SCI 5541	3	Data Science Lab

- E. Free elective credits: 15
(sum of C, D, and E should equal A)

- F. Requirements for thesis, internship or other capstone experience:
 N/A

- G. Any unique features such as interdepartmental cooperation:
 Electives include several courses from UMKC’s Bloch School of Management.