☐ **PUBLIC**
☒ **INDEPENDENT**

NEW PROGRAM PROPOSAL FOR ROUTINE REVIEW

When finished, please save and email to: he.academicprogramactions@dhe.mo.gov

Sponsoring Institution: Fontbonne University

Program Title: Data Science

Degree/Certificate: MS-Master of Science

If other, please list: Click here to enter text

Options: Click here to enter text

Delivery Site:

CIP Classification: 30.3001

Implementation Date: 8/15/2019

Is this a new off-site location? ☐ **Yes** ☒ **No**

If yes, is the new location within your institution's current CBHE-approved service region? ☐
If no, public institutions should consult the comprehensive review process

Is this a collaborative program? ☐ Yes ☒ No
If yes, please complete the collaborative programs form on last page.

Please list similar or comparable programs at Missouri public institutions of higher education.
For public institutions only

Click here to enter text

CERTIFICATIONS:

☐ The program is within the institution's CBHE approved mission. *(public only)*

☐ The program will be offered within the institution's CBHE approved service region. *(public only)*

☒ The program builds upon existing programs and faculty expertise

☒ The program does not unnecessarily duplicate an existing program in the geographically-applicable area.

☐ The program can be launched with minimal expense and falls within the institution's current operating budget. *(public only)*

AUTHORIZATION

Katie Piacentini, Registrar	Katie Piacentini	1/5/2021
Name/Title of Institutional Officer	Signature	Date

PROGRAM CHARACTERISTICS AND PERFORMANCE GOALS

Although all of the following guidelines may not be applicable to the proposed program, please carefully consider the elements in each area and respond as completely as possible in the format below.

Quantification of performance goals should be included wherever possible.

1. Student Preparation
- Any special admissions procedures or student qualifications required for this program which exceed regular university admissions, standards, e.g., ACT score, completion of core curriculum, portfolio, personal interview, etc. Please note if no special preparation will be required.
  For detailed information on university admission policies, please refer to Graduate Admission information. A current resume with three references OR three letters of recommendation, one of which is from a supervisor or recent academic advisor, are required. If this is not possible please contact the department chair. Official transcripts from all universities attended. Applicants must have completed a baccalaureate degree before beginning the master's program. IN addition, the following knowledge must be demonstrated prior to starting the MS degree. Coding experience equivalent to one full year of course work or job-related experience. Solid knowledge of statistics. Entrance examinations. A minimum GRE score of 290 is required, with 150 quantitative and 140 verbal. The GRE test can be waived if any one of the following conditions is satisfied.BS from ABET accredited program BS a technology or engineering field with a GPA of 3.5/4.0MS in related field2 years of field experience in IT related area Grade Point Average3.0/4.0 full acceptance as long as other criteria are met2.75/4.0 conditional acceptance. Must maintain 3.0 gpa for first 6 hours of course work, with no grade below B-.Self-Statement. In 500 - 600 words, tell us your goals and reason(s) for pursuing graduate study in computer science. In addition, the following applies to international students. GPA 3.0/4.0 (There is no "conditional" admission for international students based on their academic GPA.)If a student submits foreign university transcripts that we cannot evaluate, then the student must submit a WES evaluation of his/her transcripts. (WES is World Education Services, a professional organization that will help with foreign transcript evaluation.)Language requirement: 70 internet-based TOEFL (IBT)/ 6.0 IELTS/ 280 Fontbonne University Compass exam. Copy of passport. Completed international student application

- Characteristics of a specific population to be served, if applicable.
  Click here to enter text

2. Faculty Characteristics
- Any special requirements (degree status, training, etc.) for assignment of teaching for this degree/certificate.
  Fontbonne is accredited by the Higher Learning Commission (HLC) and complies with HLC minimum faculty qualifications. In particular, faculty generally must have a degree in the discipline that is one level higher than offered. In doctoral programs, faculty must have a terminal degree and demonstrate research and accomplishments commensurate with a doctoral program. In some cases, we will also hire faculty that do not meet these criteria but do meet the "tested experience" criteria that we developed to comply with the HLC criteria.

- Estimated percentage of credit hours that will be assigned to full time faculty. Please use the term "full time faculty" (and not FTE) in your descriptions here.
  We estimate that approximately 50% of courses will be taught by full-time faculty.

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

All Fontbonne faculty are expected to be up-to-date on their discipline. Full-time faculty, as part of the annual review process, are expected to document professional activities and innovation in the classroom that improves student learning. Fontbonne maintains a low student to faculty ratio, and all faculty have extensive student contact

3. Enrollment Projections
- Student FTE majoring in program by the end of five years.
  10

- Percent of full time and part time enrollment by the end of five years.

STUDENT ENROLLMENT PROJECTIONS

YEAR	1	2	3	4	5
Full Time	3	5	10	10	10
Part Time	0	0	0	0	0
Total	3	5	10	10	10

4. Student and Program Outcomes
- Number of graduates per annum at three and five years after implementation.
  Year 3 – 3; Year 5 - 10

- Special skills specific to the program.
  Click here to enter text

- Proportion of students who will achieve licensing, certification, or registration.
  Click here to enter text

- Performance on national and/or local assessments, e.g., percent of students scoring above the 50th percentile on normed tests; percent of students achieving minimal cut-scores on criterion-referenced tests. Include expected results on assessments of general education and on exit assessments in a particular discipline as well as the name of any nationally recognized assessments used.
  Click here to enter text

- Placement rates in related fields, in other fields, unemployed.
  Click here to enter text

- Transfer rates, continuous study.
  Click here to enter text

5. Program Accreditation
- Institutional plans for accreditation, if applicable, including accrediting agency and timeline. If there are no plans to seek specialized accreditation, please provide rationale.

We do not believe any appropriate specialized accreditor exists for these programs that would add value to the degree.

6. Program Structure

A. Total credits required for graduation: 34

B. Residency requirements, if any:

C. General education: Total credits: 0

Courses (specific courses OR distribution area and credits)

D. Major requirements: Total credits: 34

Course Number	Credits	Course Title
CIS 511	3	Cloud Computing and the Internet of Things
CIS 512	3	Data Retrieval and Security
CIS 519	3	Business Intelligence
CIS 523	3	IT Leadership & Management
CIS 550	3	Introduction to Data Mining and its Applications
CIS 551	3	Statistics for Data Science
CIS 555	3	Machine Learning I
CIS 557	3	Big Data Analysis and Visualization
CIS 558	3	Deep Learning
CIS 559	3	Data Mining and Digital Image Processing
CIS 589	1	Capstone Portfolio
CIS 590	3	Practical Research Project

E. Free elective credits: 0
   (sum of C, D, and E should equal A)

F. Requirements for thesis, internship or other capstone experience:
Students complete a capstone project.

G. Any unique features such as interdepartmental cooperation:
   Click here to enter text

7. Need/Demand

☒Student demand

☒Market demand

☒Societal demand

☒I hereby certify that the institution has conducted research on the feasibility of the proposal and it is likely the program will be successful.

On July 1, 2011, the Coordinating Board for Higher Education began provisionally approving all new programs with a subsequent review and consideration for full approval after five years.

COLLABORATIVE PROGRAMS

- **Sponsoring Institution One:** Choose an institution

- **Sponsoring Institution Two:** Choose an institution

- **Other Collaborative Institutions**: Click here to enter text

- **Length of Agreement:** Click here to enter text

- **Which institution(s) will have degree-granting authority?** Click here to enter text

- **Which institution(s) will have the authority for faculty hiring, course assignment, evaluation and reappointment decisions?** Click here to enter text

- **What agreements exist to ensure that faculty from all participating institutions will be involved in decisions about the curriculum, admissions standards, exit requirements?**
  Click here to enter text

- **Which institution(s) will be responsible for academic and student-support services, e.g., registration, advising, library, academic assistance, financial aid, etc.?**
  Click here to enter text

- **What agreements exist to ensure that the academic calendars of the participating institutions have been aligned as needed?**
  Click here to enter text

*Please save and email this form to***: he.academicprogramactions@dhe.mo.gov**