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NEW PROGRAM PROPOSAL FORM

Sponsoring Institution(s): Park Unviersity

Program Title: Master of Science in Information Systems and Data Analytics

Degree/Certificate: Masters Degree

Options: Click here to enter text.

Delivery Site(s): Parkville, MO & Online

CIP Classification: 11.0802

*CIP code can be cross-referenced with programs offered in your region on MDHE's program inventory highered.mo.gov/ProgramInventory/search.jsp

Implementation Date: Fall 2017

Cooperative Partners: The only collaboration will be in the area of recruitment thus Form CL is not being submitted. International recruitment will be coordinated through the university and in collaboration with the following vendors: Emerging Consultants (India), International Education NGO (Mongolia), Korea-American Education (Korea), Global E. I. (Korea), Femon Travels and Tour (Ghana and West Africa), School Apply (Outside USA (mulitple countries), and JBM International Student Services (Uganda and West Africa).All admissions processing and decision-making will be done at the univerisity.

*If this is a collaborative program, form CL must be included with this proposal

AUTHORIZATION:

Douglas Fiore, Provost		1/26/17
Name/Title of Institutional Officer	Signature	Date

Brad Kliendl, Dean, College of Management	815-584-6568
Person to Contact for More Information	Telephone

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STUDENT ENROLLMENT PROJECTIONS

Year	1	2	3	4	5
Full Time	15	25	35	45	55
Part Time	2	4	8	12	15
Total	17	29	43	57	70

Please provide a rationale regarding how student enrollment projections were calculated:

Enrollment Projections: Historically, the vast majority of graduate students within the College of Management pursue a full-time academic load, which consists of one course per 8-week term. It is anticipated that this pattern of enrollment will exist within the MS in ISDA. It is also anticipated that the majority of MS in ISDA students will come from Park University's undergraduate alumni, 4+1 options, our sequential degree options, as well as new domestic students. In addition, we anticipate that 25% of the new students will be international, requiring an F-1 visa. The enrollment figures above include average enrollments for five terms per year (Fall 1 and 2, Spring 1 and 2, and Summer). There will likely be supernormal growth from years 1 and 2, which is typical when a new program of study is up and running, but then will begin to normalize over subsequent years of existence. Note: Eventually, the enrollments for the MS in ISDA will level off; however, before then the College of Management will look to rollout other relevant concentrations for the Information Systems program.

Provide a **rationale** for proposing this program, including **evidence of market demand and societal need supported by research:**

Trends in Data Analytics

According to Forbes, eighty-nine percent (89%) of business leaders believe that big data will revolutionize business operations in the same way the Internet changed corporate America. Eighty-three percent (83%) of these leaders are pursuing big data projects as a means of gaining a competitive advantage in their respective industries. Wikibon is projecting that the big data market will top $84B in 2026, which represents a 17% compounding annual growth rate for the

forecast period. This forecast appears realistic, since the big data market reached $27.36B in 2014, up from $19.6B in 2013. Globally, the big data market is projected to reach $122B in sales revenue alone by 2025 (World's Top). According to Frost & Sullivan, global data traffic is projected to cross 100 zettabytes (1 ZB = $1,000^7$ bytes = 10^{21} bytes) annually by 2025 (World's Top). The global text analytics market is projected to reach $6.5B by 2020, which customer relationship management, predictive analytics, and brand reputation being the top three (3) applications (Global Text).

Employment Projections

The graduates from the MS in Information Systems and Data Analytics will be prepared to work within a variety of organizational settings and assist these entities in forging working bridges between the needs and expectations of business and information technology. Given the unique blend of information systems and data analytics, it would be reasonable to see graduates from this program secure positions as Computer Systems Analysts, Management Analysts, Operations Analysts, or similar vocations. As the graduates gain more experience within the field, it is conceivable that they will qualify for mid- and senior level positions within the discipline of information systems, information technology, or where analytics is an essential competency. According to the Occupational Outlook Handbook, it is anticipated that the vocation of Computer Systems Analysts will grow at a rate of 21% between the years of 2014-2024. To put this in perspective, the average expected growth rate for all other occupations (combined) will be 7% over the same period of time. At all levels within the IS/IT field, from generalist to the executive ranks, the projected rate of growth is expected to be double digits through 2024, outpacing many other disciplines. Operations Analysts and Management Analysts are projected to experience an average growth rate of 30% and 14% respectively through 2024 (Occupational Outlook Handbook). According the Federal Bureau of Labor Statistics (FBLS), the median annual compensation, in 2015, was $85,800 for Computer Systems Analysts, $81,320 for Management Analysts, and a respectable $78,630 for Operations Analysts. For those obtaining mid- and senior level positions, the compensation is north of $100,000. For analyst positions, many employers are preferring applicants with a baccalaureate degree; however, a growing number are seeking candidates for mid- and senior level positions that possess an earned graduate degree (Occupational Outlook Handbook). The median compensation, for each position, was compared against other well established employment sites such as money.usnews.com ("Best Jobs"); indeed.com; payscale.com; and glassdoor.com. The results largely affirm the compensation figures published by the FBLS when taking into account inflation.

International Student Recruitment

The U.S. Department of Education has identified a number of graduate degree programs that fall under the umbrella of science, technology, engineering, and math (STEM). These disciplines have consistently experienced low or declining enrollment despite a growing demand for graduates in industry. According to the U.S. Department of Education, STEM related jobs are projected to increase at a faster rate than the average of all occupations. More specifically, Computer Systems Analysts are expected to grow at an average annual rate of 22% between the years of 2010 and 2020. This is statistically identical to the projections published by the Bureau of Labor Statistics for seeking career opportunities as Computer Systems Analysts. According to Kevin Vicker, Senior Director, Office of International Students, there is a high demand for graduate programs that fall under STEM, such as the proposed Master of Science in Information Systems and Data Analytics. Those international students who gain admission into the program and successfully complete the program of study, will not only be eligible for one (1) year of Optional Practical Training (OPT), but will also qualify for an additional 24 months, which brings the total of 36 months. Optional Practical Training provides international students the opportunity to gain practical and relevant work experience in their chosen vocation.

Comparative Analyses

The College of Management has conducted a comparative analysis of regionally accredited graduate programs in information systems from across the country. More specifically, we were examining the content within their curricula, the number of courses, the concentrations made available to the students, and the total credit hours (core curriculum and concentration). The graduate programs in information systems that were included in the benchmarking were: Johns Hopkins (Baltimore, MD), Syracuse University (Syracuse, NY), University of Alabama (Birmingham, AL), Boston University (Boston, MA), Carnegie Mellon University (Pittsburgh, PA), Webster University (Webster Grove, MO), Bellevue University (Bellevue, NE), Friends University (Wichita, KS), Baker University (Baldwin City, KS), and Northwest Missouri State University (Maryville, MO). The average length of the curricula comes to 40.5 credit hours or the equivalent with range of 22 (min. = 33, max. = 55), median of 38.5, and mode of 36. Half of the programs include a formal concentration in analytics (Carnegie Mellon, Syracuse, Friends, Bellevue, and Boston University).

In addition to examining the curricula of graduate programs in information systems, the College also performed a comparative analysis of graduate programs focusing on business analytics, as well as graduate certificates and formal concentrations in the same discipline. The purpose of this analysis was to examine the commonalities between the curricula in terms of subject matter and topical content covered in the business analytics and intelligence field of study. The specific

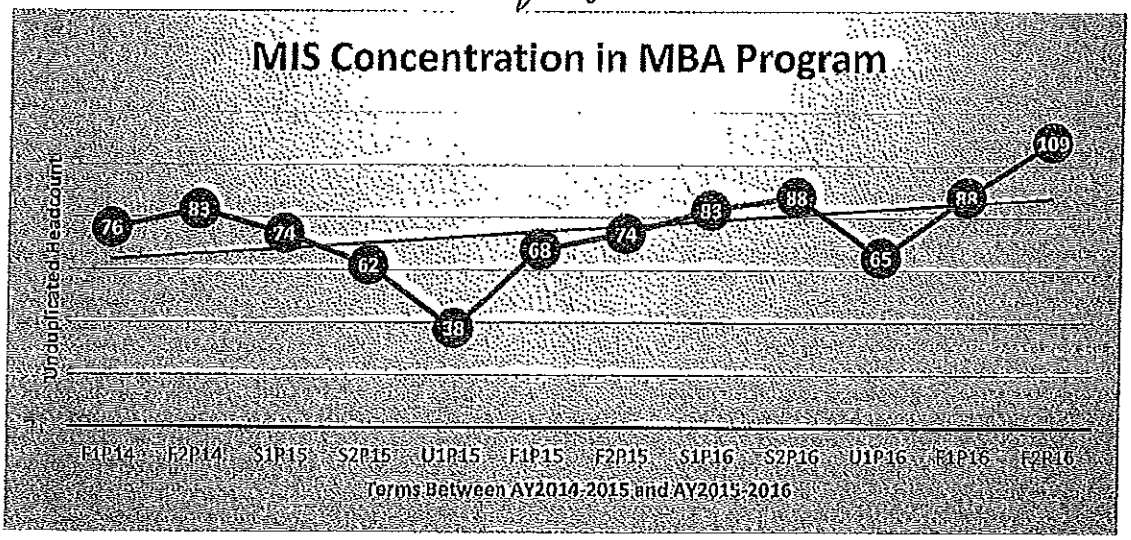
programs examined included Carnegie Mellon (Pittsburgh, PA), Syracuse University (Syracuse, NY), Boston University (Boston, MA), Bellevue University (Bellevue, NE), Friends University (Wichita, KS), Emporia State University (Emporia, KS), Kansas State University (Manhattan, KS), University of Kansas (Lawrence, KS), Missouri University of Science and Technology (Rolla, MO), Rockhurst University (Kansas City, MO), University of Missouri-Columbia (Columbia, MO), and University of Missouri-St. Louis (St. Louis, MO).

"Ninety-eight percent of employers believe business school graduates need to know how to use data to drive decisions", according to the 2013 "Year-End Poll of Employers" administered by the Graduate Management Admission Council (www.babson.edu).

Current MIS Concentration Data (graduate)

The MBA program created and launched a formal concentration in Management Information Systems a few years ago. Based on the trend analysis, of the MIS concentration (see below), it appears that the unduplicated headcount in AY2014-2015 began to wane as the terms progressed. The particularly low value in the Summer of 2015 (U1P15) was due the program not promoting Summer enrollments. Conversely, the data pattern in AY2015-2016, shows a steady increases in the unduplicated headcount from Fall 1 2015 through Spring 2 2016. There was a slight decline in the Summer of 2016; however, much less pronounced than the prior Summer. This can be attributed, in large part, to the implementation of a strategy to boost Summer enrollments. If Fall 1 and 2 2016 are any indication, we will be experiencing a similar growth pattern in the MIS concentration throughout AY2016-2017.

This information is useful in terms of gaging potential demand. It is reasonable to assume that a small percentage of the students who elected to pursue the MBA in MIS would have chosen the new degree option has it been available. With that said, it is equally likely that some of the MBA graduates will elect to take advantage of the sequential degree option and pursue the MS in Information Systems and Data Analytics as their second degree option. The inverse is also very likely. The MHA only began offering the MIS concentration in Fall 1 2016, and so far seven (7) enrolled in this concentration during the first term and now the unduplicated headcount is 10 for Fall 2 2016. In both the MBA and MHA programs, a large proportion of students purposely hold off declaring a concentration until they've had more time to weigh their options. The College anticipates that a fairly decent percentage of their undecided student will choose the MIS concentration. There is high demand for information systems and information technology professionals with a solid understanding of data analytics. The students know this and are seeking degrees and concentrations that will give them the competencies they require to be successful in this vocation.



Current CSIS Data (undergraduate)

Since the Computer Science and Information Systems undergraduate curriculum could be considered a "feeder program" into the new MS in Information Systems and Data Analytics program, it is important to consider the unduplicated headcount trends for the program over the past several academic years. This provides a barometer check for the potential demand we may expect once the new graduate curriculum is accepting applicants. An examination of the data reveal a 26.6% growth rate in the unduplicated headcount from AY2010-2011 to AY2011-2012, and then another 16.6% increase from AY2012-2013. There was a 5.3% decline AY2013-2014, followed by a 5.4% increase the following year. The rate of growth appears to have flattened out between AY2012-2013 and AY2014-2015; however, it is noteworthy to point out that the program ended the 2014-2015 year with a total of 1,555 students. This is a respectable volume when considering the unduplicated headcount figures of the other undergraduate programs at Park. The graph below provides a visual representation of the trended unduplicated headcount for the CSIS program between AY2010-2011 and AY2014-2015.

Based on this data, it appears that the CSIS undergraduate program has avoided sharp declines in enrollments despite the inverse being true of other programs. The approval of the new Master of Science in Information Systems and Data Analytics will provide the graduates of the CSIS program an opportunity to continue their education at Park in a graduate program that aligns with their undergraduate preparation and vocational aspirations. There may also be an opportunity to create a 4+1 options between the CSIS and MS programs. The MIS program, in the College of Management, has been experiencing declining enrollments; however, the new graduate program

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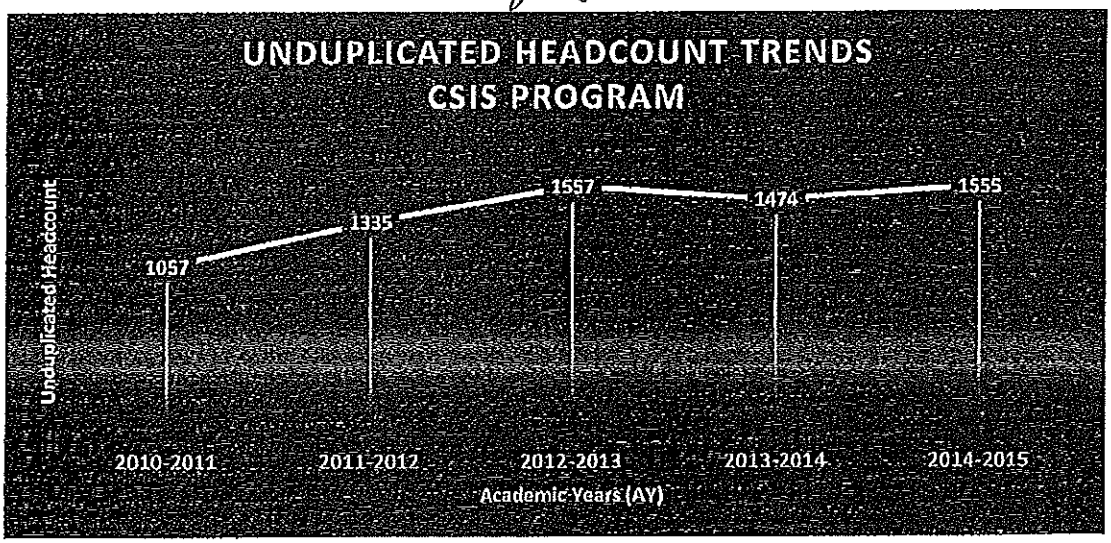

will provide these graduates an opportunity to continue their educational pursuits, at Park, and possibly create the potential that qualified juniors and seniors can take part in a 4+1 option.

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PROGRAM STRUCTURE

A. Total credits required for graduation: 36

B. Residency requirements, if any: 0

C. General education: Total credits: 0

Courses (specific courses OR distribution area and credits):

Course Number	Credits	Course Title

D. Major requirements: Total credits: 36

CIS600	3	Management Information Systems
CIS601	3	Systems Analysis and Design
CIS602	3	Database Management Systems
CIS603	3	Information Security and Risk Management
CIS604	3	Project Management for Information Technology
CIS605	3	Data Analysis and Business Analytics

MBA676	3	Operations Management
CIS610	3	Capstone in Information Systems
CIS606	3	Applied Data Mining and Analysis of Big Data
CIS607	3	Survey of Predictive Analytical Techniques
CIS608	3	Web and Marketing Analytics
CIS609	3	Data Visualization

E. Free elective credits:
36
(Sum of C, D, and E should equal A.)

F. Requirements for thesis, internship or other capstone experience:

CIS610 Capstone in Information Systems

This capstone course focuses on the integration and synthesis of previous knowledge in information systems and the student's concentration of choice. More specifically, students will analyze and synthesize relevant data and user requirements, and then utilize this information to develop and implement recommendations that may assist a firm in maintaining its competitive advantage in a highly dynamic environment. (3 credit hours.)

The graduate programs in business, for which the new MS program will be a part, administers a Major Field Test (MFT) to all students enrolled in their capstone course. This direct summative assessment is administered, analyzed, and reported by Peregrine Academic Services. The results assess student mastery of the common professional components (CPC), and then compare our results to that of comparable programs of study.

G. Any unique features such as interdepartmental cooperation:
No

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PROGRAM CHARACTERISTICS AND PERFORMANCE GOALS

Institution Name Park University
Program Name Master of Science Information Systems and Data Analytics
Date January 27, 2017

(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.
  No qualifications that exceed the regular university graduate admissions.

- Characteristics of a specific population to be served, if applicable.
  It is anticipated that 50% of the recruitment will be international recruitment.

2. Faculty Characteristics

- Any special requirements (degree status, training, etc.) for assignment of teaching for this degree/certificate.
  The program will require one (1) full-time, doctoral prepared, tenured track faculty member in information systems and analytics; four (4) doctoral prepared adjunct faculty in information systems; and three (3) doctoral prepared faculty in economics to cover the analytic coursework. The faculty are properly credentialed and experienced to cover the subject matter and the number of courses/sections to be scheduled.

- 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.
  It is estimated that 25% of the courses within the MS in ISDA will be taught by full time faculty with the remainder being taught by terminally credentialed part time faculty (adjuncts).

- Expectations for professional activities, special student contact, teaching/learning innovation.
  The full time and part time faculty are expected to remain current in their discipline; take advantage of professional and professional development opportunities intended to strengthen their effectiveness as an instructor and practitioner; adhere to the graduate

policies and procedurs; and assessment activities. The faculty are expected to respond to all student inquiries within 24 hours of receipt during the work week and within 48 hours over the weekend and holidays. In addition, faculty are expected to be available to students for one-on-one advising and tutorial support over the phone or through the university's learning management system (Canvas). The university utilizes two modalities of instruction: online and blended. The blended courses are conducted using a flipped classroom model. In other words, the faculty hold the students accountable for doing the assigned readings, reviewing supplemental materials, and completing graded activies prior to class, so that the instructor can leverage the actual class time to reinforce learned concepts and permit studnets to apply what they've learned. Faculty are encouraged to take full advantage of the features with the Canvas system. For example, faculty have students use the "group" function for team projects; have their students deliver formal presentations using the conferencing feature; recording team meetings, presentations, and mini-lectures using the "video conferencing" function.

3. Enrollment Projections

- Student FTE majoring in program by the end of five years.
  70

- Percent of full time and part time enrollment by the end of five years.
  80% full time and 20% part-time by the end of year five

4. Student and Program Outcomes

- Number of graduates per annum at three and five years after implementation.
  30 graduates in year 3 and an additional 30 graduates in year 5

- Special skills specific to the program.
  The graduates will be able to: develop and maintain the information systems necessary to support the functional, operational, and strategic needs of domestic and multinational organizations [Business Knowledge and Skills]; determine the most efficient and effective methods of leading and managing the resources to support a firm's information systems and technology [Leadership]; evaluate technology alternatives to resolve complex problems in an information systems context while taking into consideration internal and external constraints and the ethical implications [Business Knowledge and Skills]; formulate a plan to effectively collaborate and communicate with key stakeholders (business, HIMS, and IT professionals) in order to achieve corporate or functional level goals and objectives [Communication and Relationship Management AND Professionalism]; establish an organization-wide information security risk

management program designed to isolate significant internal and external threats while concurrently designing and implementing contingency, business continuity, and disaster recovery plans [Business Knowledge and Skills AND Knowledge of the Business Environment]; evaluate the usefulness of information technology to achieve a competitive advantage, efficient operations, and effective decision-making [Knowledge of the Business Environment]; and analyze large datasets for the purpose of uncovering hidden patterns, predicting future trajectories, and then using the resultant information to aid organizations in making well-informed operating, marketing, financing, and strategic decisions [Business Knowledge and Skills].

- Proportion of students who will achieve licensing, certification, or registration.
  Not applicable. The program doesn't not preport to prepare students for special certification or licensing requirements.

- 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.
  The program will use a comprehensive assessment model designed to ensure curricular quality and integrity and the assessment of student mastery of course and program learning outcomes. The program will use the IDEA assessment to gather indirect, summative assessment data from students at the conclusion of each courses with the curriculum. The results are compared against a normative dataset. In addition, the graduate programs in business, for which the new MS program will be apart, administers a Major Field Test (MFT) to all students enrolled in their capstone course. This direct, summative assessment is administered, analyzed, and reported by Peregrine Academic Services. The results assess student mastery of the common professional components (CPC) and then compare our results to that of comparable programs of study.

- Placement rates in related fields, in other fields, unemployed.
  There are no students currently enrolled in this program, since it is pending approvals outside the university. As a result, it isn't possible to report this data.

- Transfer rates, continuous study.
  There are no students currently enrolled in this program, since it is pending approvals outside the university. As a result, it isn't possible to report this data.

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 a rationale.**

It is the intent of the MS in ISDA to seek programmatic accreditation through Accreditation Council for Business Schools and Programs (ACBSP), once the program meets the minimum criteria for consideration.

6. Alumni and Employer Survey

- Expected satisfaction rates for alumni, *including timing and method of surveys.*
  To assess the overall effectiveness of the MS program, an alumni survey will be administered near the point of graduation (baseline), and then at 1, 2, and 5 year intervals. The instrument will be administered via Survey Monkey and statistically analyzed by the College of Management.

- Expected satisfaction rates for employers, including timing and method of surveys.
  The MS in ISDA will be employing a number of scholar/practitioners to facilitate course within the curriculum. If is believed that these faculty will be well positioned to assess the strengths and weaknesses within the curriculum, so that this information can be leveraged to make curricular enhancements. In addition, the program will take full advantage of the College of Management's Advisory Council to assess the currency of the curriculum, it's ability to meet industry needs, and the competency of the graduates in their employment.

7. Institutional Characteristics

- Characteristics demonstrating why your institution is particularly well-equipped to support the program.
  The operating budget for the MS program is assumed to align closely with that of the Master of Healthcare Administration, since both are specialty programs that will include the same budgeted line items. The line items within the operating budget are considered fixed costs, since labor and benefit expenses are excluded. At present, the MHA has around 180 active students, and the budget is adequate to cover the rapid growth and ensure programatic quality.