### PROPOSAL – 1

### NEW DEGREE PROGRAM

1. **PROPOSED PROGRAM TITLE:** Master of Healthcare Business Analytics

2. **CIP CODE REQUESTED:** 51.2706

Link for CIP Codes:  <http://nces.ed.gov/ipeds/cipcode/resources.aspx?y=55>.

3. **PROPOSED STARTING DATE:** Fall 2022

4. **CONTACT PERSON**

Name (Provost/Academic Affairs Officer): Dr. Ketevan Mamiseishvili

Title: Interim Vice Provost for Academic Affairs

Name of Institution: University of Arkansas Fayetteville

E-mail Address: kmamisei@uark.edu

Phone Number: (479) 575-2151

Name (Program Contact Person): Paul Cronan

Title: Professor, Information Systems

E-mail Address: cronan@uark.edu

Phone Number: 479-575-6130

5. **PROGRAM SUMMARY**

The thirty (30) hour Master of Healthcare Business Analytics (M.H.B.A.) degree program (intra-college program between the Sam M. Walton College of Business and the College of Education and Health Professionals) is a unique professional degree/credentials focused on business analytics applications in healthcare and healthcare analytics applications.

The Master of Healthcare Business Analytics (M.H.B.A.) degree is a professional thirty (30) hour degree focusing on business analytics applications in healthcare and healthcare analytics applications. The degree will address barriers and facilitators to adoption of new procedures in the healthcare environment, as well as how analytics can achieve modern healthcare system goals: high-quality, responsive, affordable, and efficient care. Healthcare systems capture enormous amounts of information (such as electronic health records, billing information, patient wait times, supply records) as well as more novel forms of data (such as chronic disease monitoring, radio-frequency identification tracking, etc.). Managerial issues such as how to get electronic data users to employ it consistently for improving healthcare delivery, managing the reporting and sharing of data, and leveraging data and resources to improve health at a manageable cost. This degree program is designed to provide professional preparation for positions in healthcare business, government, and public service. Sufficient flexibility is provided to meet the needs of students with various backgrounds and foster lifelong learning and innovation.

List degree programs or emphasis areas currently offered at the institution that support the proposed program.

Master of Applied Business Analytics

Enterprise Systems Graduate Certificate

Statistics and Analytics, Master of Science

Master of Information Systems

Educational Statistics and Research Methods, Doctor of Philosophy

6. **NEED FOR THE PROGRAM**

Submit Workforce Analysis Form or Employer Needs Survey (only when workforce data is deficient for the academic disciple within the proposal)

See Appendix C

Employer Needs Survey should include the following:

* Submit numbers that show job availability, corporate demands and employment/wage projections, not student interest and anticipated enrollment.  Focus mostly on state needs and less on regional and national needs, unless applicable to the program.
* Survey data can be obtained by telephone, letters of interest, student inquiry, etc.  Focus mostly on state needs for undergraduate programs; for graduate programs, focus on state, regional and national needs.
* Provide names and types of organizations/businesses surveyed.

Letters of support should address the following when relevant: the number of current/anticipated job vacancies, whether the degree is desired or required for advancement, the increase in wages projected based on additional education, etc.

Recently, for several new Walton College Master’s degree programs (Master of Applied Business Analytics, Master of Economic Analytics, and others), an employer needs survey form was sent to several individuals working in prominent positions in the corporate sector. The individuals who responded come from firms such as Wal-Mart, Tyson Foods, J. B. Hunt, Blue Cross, Visa, Amazon, IRI, and Toyota, among others.

Indicate if employer tuition assistance is provided or if there are other enrollment

incentives.

Some companies have employer tuition assistance programs dependent upon employee

time with the company.

Describe what need the proposed program will address and how the institution became aware of this need.

The digital revolution ignited an explosion of data in many areas; this is the case in healthcare – patient data, hospital data, provider data and other. The availability of data is no longer a constraint to answering important questions. The critical constraint is now the ability to analyze, digest, visualize, and ultimately harness the data to drive decision making in business, science, and society. The Master of Healthcare Business Analytics program will guide students through application modeling to practice using cutting-edge tools and providing a thorough training in descriptive, predictive, and prescriptive healthcare business analytics. Students will be armed with a solid knowledge of healthcare business analytics as well as methods and tools available. These “big-data” skills, combined with knowledge of healthcare and business application modeling, will enable students to identify, assess, and seize the opportunity for data-driven value creation in the private and public sector.

Indicate which employers contacted the institution about offering the proposed program.

Alumni from the current Master of Information Systems, Master of Applied Business Analytics and Business Analytics Graduate Certificate in Enterprise Systems who currently work in data analytics in the corporate sector have communicated the need for the skills and training this program will provide. In addition, we have had meetings with executives from a number of firms, such as Dillard’s, J. B. Hunt, Arkansas Blue Cross Blue Shield, Wal-Mart, Tyson Foods, etc. who have an urgent need for employees with this training.

Indicate the composition of the program advisory committee, including the number of members, professional background of members, topics to be considered by the members, meeting schedule (annually, bi-annually, quarterly), institutional representative, etc.

We plan to initially utilize the Information Systems Enterprise Advisory Board (as well

as members of the College Deans’ Advisory Boards) to provide ongoing feedback and suggestions on the content of the program and student placement. Then, a Healthcare Business Analytics Advisory Board will be constituted. The advisory committee will meet bi-annually.

Indicate the projected number of program enrollments for Years 1 - 3.

Year 1 - 15 students

Year 2 – 20 – 25 students

Year 3 – 25 – 30 students

Indicate the projected number of program graduates in 3-5 years.

Program graduates – since this is a 5 semester program, in 3 – 5 years we expect to graduate approximately 40 – 50 students

7. **CURRICULUM**

# Provide curriculum outline by semester (include course number and title).

# (For bachelor’s degree program, submit the 8-semester degree plan.)

**Requirements for the Master of Healthcare Business Analytics Degree:**

**Core Courses 24**

*ESRM 5303 Healthcare Analytics Fundamentals* 3

ISYS 5503 Decision Support and Analytics 3

*ESRM 5823 Healthcare Business Analytics I* 3

ISYS 5833 Data Management Systems 3

ISYS 5843 Sem in Bus Intelligence and Knowledge Mgmt 3

*ESRM 5853 Healthcare Business Analytics II* 3

ISYS 599V Practicum Seminar 6

**Electives (select any 6 hours from the following) 6**

ESRM 6423 Multiple Regression Techniques for Education 3

PBHL 5563 Public Health: Practices and Planning 3

STAT 5313 Regression Analysis 3

ISYS 5213 ERP Fundamentals 3

ISYS 5013 Data and Cybersecurity 3

ISYS 5023 Data and System Security 3

ISYS 5043 Cybersecurity, Crime, and Data Privacy Law I 3

ISYS 5173 Blockchain Fundamentals 3

ISYS 535V Internship Experience 3

ECON 5763 Economic Analytics 3

MKTG 5523 Marketing Analytics 3

SCMT 5693 Supply Chain Performance

Management and Analytics 3

STAT 5353 Methods of Multivariate Analysis 3

**Total Hours** **30**

Give total number of semester credit hours required for the program, including prerequisite courses.

30 hours

Identify new courses *(in italics)* and provide course descriptions.

These new courses will be taught by ESRM faculty:

***ESRM 5303 Healthcare Analytics Fundamentals***

Catalog Description: The Healthcare Analytics Fundamentals course provides fundamental knowledge and skills in several major areas of healthcare and business data analytics in a modular format.

Course Content: Several modules that emphasize healthcare analytics as well as data fundamentals, concepts, and problems are used and include – Healthcare Analytics Concepts, Problems, and Management; Intermediate & Advanced Spreadsheet Topics; Relational Databases & SQL; and Introductory Programming with Python.

***ESRM 5823 Healthcare Business Analytics I* 3**

Catalog Description: Fundamentals of data patterns, forecasting techniques, and linear prediction models, including theoretical and mathematical study of assumptions in model building.

Course Content: Builds on the foundation of analyzing basic trends and developing hypotheses and extends to the use of linear regression. Topics include comparisons of straight-line methods and moving averages, introduction to smoothing methods, development of prediction models, model building, regression inference, assumptions and multicollinearity, residual analysis, outliers and influential data, heteroscedasticity corrections, dummy and effect coding, and testing for interactions. The focus is on an understanding of the theoretical basis and mathematical foundation of linear regression models, with applications to real-world experiences in health-related fields.

***ESRM 5853 Healthcare Business Analytics II* 3**

Catalog Description: Categorical analyses and logistic regression for binary and polytomous models applied to the field of healthcare.

Course Content: Builds on the foundation of testing relationships and building prediction models with categorical outcomes. Topics include tests of independence, measures of association, comparisons of exact vs approximate tests of hypotheses, odds ratios, logistic regression with binary and polytomous outcomes. The focus is on an understanding of the theoretical basis and mathematical foundation of measures of association and logistic regression models, with applications to real-world experiences in health-related fields.

Identify required general education courses, core courses and major courses.

None

For each program major/specialty area course, list the faculty member assigned to teach the course.

Professors Susan Bristow, Paul Cronan, Elizabeth Keiffer, Wen-Juo Lo, and Ronna C. Turner

Identify courses currently offered by distance technology (with an asterisk\*) and endnote at the end of the document.

Indicate the number of contact hours for internship/clinical courses.

There are no internship/clinical courses proposed for this degree.

State the program admission requirements.

Students whose previous studies have fulfilled requirements of the common body of knowledge in business and analytics will be required to complete a minimum of 30 hours of graduate work. The required common body of knowledge for the Master of Healthcare Business Analytics degree includes fundamental business and economics concepts as well as fundamental knowledge of statistics. The M.H.B.A. program considers work experience an integral part of the curriculum and recommends that students work/intern for up to one year in a position (or positions) which allow for the practical application of the theoretical principles taught in courses.

Students who hold non-immigrant status in the United States in the F-1 or J-1 categories are responsible for coordinating any necessary authorization for employment with the Office of International Students and Scholars (ISS). F-1 and J-1 students are strongly advised to discuss training options with the M.H.B.A. Program Director and the ISS office early in their program, and to make themselves aware of limitations and restrictions related to F-1 or J-1 employment authorization benefits.

Describe specified learning outcomes and course examination procedures.

Students will have the ability to apply healthcare business analytics, machine learning methods, prescriptive models, data, and computing to identify, assess, and seize the opportunity for data-driven value creation in the private and public sectors.

Examinations will involve visualization, application development, problem-solving and practicum-style data-analysis, depending upon the course.

Include a copy of the course evaluation to be completed by the student.

The Standard Purdue Course Evaluation form will be used. See Appendix A.

Include information received from potential employers about course content.

Potential employers expressed the need for strong business application-oriented analytics skills, especially in database, machine learning and other skills for analyzing data. These are an important part of the program.

Provide institutional curriculum committee review/approval date for proposed program.

January 19, 2022

8. **FACULTY**

List the names and credentials of all faculty teaching courses for the proposed program. Include college/university awarding degree; degree level; degree field; subject area of courses faculty currently teaching and/or will teach. (For associate degrees and above: A minimum of one full-time faculty member with appropriate academic credentials is required.)

|  |  |  |
| --- | --- | --- |
| **Faculty Member** | **Degree, Subject** | **Institution** |
| Daniel Conway | PhD, Decision Science | Indiana University |
| Michael Dereszynski | MS, Information Systems | University of Arkansas |
| Jana Gastineau | MS, Mathematics | University of Arkansas |
| Jeffrey Mullins | PhD, Information Systems | University of Arkansas |
| Elizabeth Keiffer | PhD, Educational Statistics | University of Arkansas |
| Steve Nolan | MS, Information Systems | University of Arkansas |
| Paul Cronan | DBA, Quantitative Analysis | Louisiana Tech University |
| Qin Weng | PhD, Information Systems | University of Pittsburgh |
| Wen-Juo Lo | PhD, Educational Psychology-Measurement, Statistics, and Methodological Studies | Arizona State University |
| Ronna C. Turner | PhD, Educational Psychology- Quantitative and Evaluative Research Methodologies | University of Illinois |

Indicate lead faculty member or program coordinator for the proposed program.

Paul Cronan and Susan Bristow, Co-Coordinators, Information Systems Department

Total number of faculty required for program implementation, including the number of existing faculty and number of new faculty. **For new faculty, provide the expected credentials/experience and expected hire date.**

5 – 6 existing faculty plus 2 new faculty positions for College of Education and Health Professionals (COEHP) and 2 new faculty positions for Sam M. Walton College of Business (WCOB).

New faculty – earned doctorate with healthcare or business analytics teaching/research experience.

Fall 2022 – 1 faculty member added in COEHP and 1 faculty added in WCOB

Fall 2023 – 1 faculty member added in COEHP and 1 faculty added in WCOB

For proposed graduate programs: Provide the curriculum vita for faculty teaching in the program, and the expected credentials for new faculty and expected hire date. Also, provide the projected startup costs for faculty research laboratories, and the projected number of and costs for graduate teaching and research assistants.

See the faculty curriculum vitae in Appendix B.

9. **DESCRIPTION OF RESOURCES**

Current library resources in the field – existing campus resources

Current instructional facilities including classrooms, instructional equipment and technology, laboratories (if applicable) - existing campus resources

New instructional resources required, including costs and acquisition plan – existing

campus resources

10. **NEW PROGRAM COSTS – Expenditures for the first 3 years**

New administrative costs (number and position titles of new administrators) –

Co-Directors - $60,000 per director

Administrative Assistant - $30,000

Number of new faculty (full-time and part-time) and costs –

2 faculty in the Walton College of Business - These faculty may both be non-tenure track (i.e., Clinical/Teaching faculty) or one be non-tenure track and one tenured/tenure-track. Salaries $120,000-$150,000 per faculty member plus 30% fringe costs

2 faculty in the College of Education and Health Professions - These faculty may both be non-tenure track (i.e., Clinical/Teaching faculty) or one be non-tenure track and one tenured/tenure-track. Salaries $80,000-$100,000 per faculty member plus 30% fringe costs

New library resources and costs - None

New/renovated facilities and costs - None

New instructional equipment and costs - None

Distance delivery costs (if applicable) – None additional

Other new costs (graduate assistants, secretarial support, supplies, faculty development, faculty/students research, program accreditation, etc.) - None

**If no new costs required for program implementation, provide explanation.**

The program will be delivered in existing facilities using current technology. Additional Blackboard resources will be developed with our current Instructional Design team. No new renovations or library resources are being requested. No graduate assistantship support is requested. Professional student expenses (meals, textbooks, case studies, data sets) will be supported by professional fees.

11. **SOURCE OF PROGRAM FUNDING – Income for the first 3 years of program operation**

Grant Proposal developed for Years 1 – 3 in the amount of $2M

1. Provost Office Approval for 75% Tuition/Fees recovery to the program

If there will be a reallocation of funds, indicate from which department, program, etc. –

Provost Office Approval for 75% Tuition/Fees recovery to the program.

Provide the projected annual student enrollment, the amount of student tuition per credit

hour, and the total cost of the program that includes tuition and fees.

Year 1 - 15 students

Year 2 – 20 – 25 students

Year 3 – 25 – 30 students

Tuition and Fees based on current rates for Master of Information Systems, Master of Applied Business Analytics, and Graduate Certificate in Enterprise Systems – 30 hours

Full-time Program

Current In-State Tuition & Fees

Current Out-of-State Tuition & Fees

Current International Tuition & Fees

Indicate the projected annual state general revenues for the proposed program (Provide   
 the amount of state general revenue per student).

Other (grants [list grant source & amount of grant], employers, special tuition rates,   
 mandatory technology fees, program specific fees, etc.).

12. **ORGANIZATIONAL CHART REFLECTING NEW PROGRAM**

13. **SPECIALIZED REQUIREMENTS**

If specialized accreditation is required for program, list the name of accrediting agency.

Association to Advance Collegiate Schools of Business International

Indicate the licensure/certification requirements for student entry into the field.

# 

# None

# Provide documentation of Agency/Board review/approvals (education, nursing—initial approval required, health-professions, counseling, etc.)

NA

14. **BOARD OF TRUSTEES APPROVAL**

Provide the date that the Board approved (or will consider) the proposed program.

March 17, 2022

Provide a copy of the Board meeting agenda that lists the proposed program, and written documentation of program/unit approval by the Board of Trustees prior to the Coordinating Board meeting that the proposal will be considered.

15. **SIMILAR PROGRAMS**

# List institutions offering program:

## Proposed undergraduate program – list institutions in Arkansas

Proposed master’s program – list institutions in Arkansas and region - None

Proposed doctoral program – list institutions in Arkansas, region, and nation

State why proposed program needed if offered at other institutions in Arkansas or region.

List institution(s) offering a similar program that the institution used as a model to   
 develop the proposed program.

## 

## Heinz College, Carnegie Mellon University

## Tufts University School of Medicine

University of Alabama

Provide a copy of the e-mail notification to other institutions in the state notifying them of the proposed program. Please inform institutions not to send the response to **“Reply All”**. If you receive an objection/concern(s) from an institution, reply to the institution and copy ADHE on the email. That institution should respond and copy ADHE. If the objection/concern(s) cannot be resolved, ADHE may intervene.

**Note: A written institutional objection/concern(s) to the proposed program/unit may delay Arkansas Higher Education Coordinating Board (AHECB) consideration of the proposal until the next quarterly AHECB meeting.**

16. **DESEGREGATION**

State the total number of students, number of black students, and number of other minority students enrolled in related degree programs, if applicable.

1. **INSTITUTIONAL AGREEMENTS/MEMORANDUM OF UNDERSTANDING (MOU)**

If the courses or academic support services will be provided by other institutions or organizations, include a copy of the signed MOU that outlines the responsibilities of each party and the effective dates of the agreement.

1. **ACADEMIC PROGRAM REVIEW**

Provide scheduled program review date (within 10 years of program implementation date).

2026-2027

1. **PROVIDE ADDITIONAL INFORMATION IF REQUESTED BY ADHE** **STAFF**
2. **INSTRUCTION BY DISTANCE TECHNOLOGY**

If the proposed program will be offered by distance technology, provide the following information:

Summarize institutional policies on the establishment, organization, funding and management of distance courses/degrees.

Describe the internal organizational structure that coordinates (development, technical support, oversight) distances courses/degrees.

Summarize the policies and procedures to keep the technology infrastructure current.

Summarize the procedures that assure the security of personal information.

Provide a list of services that will be outsourced to other organizations (course materials, course management and delivery, technical services, online payment, student privacy, etc.).