ATTACHMENT 4E

ADD, CHANGE OR DELETE UNIT, PROGRAM REQUIREMENTS, OR ACADEMIC POLICIES

Complete this form consistent with the instructions in Academic Policy 1622.20. Use the form to add, change, or delete a program or unit or to change program policies. Proposed additions and changes must be consistent with Academic Policies 1100.40 and 1621.10 and any other policies which apply.

SECTION I: Approvals

_____   _____
Department / Program Chair   Date Submitted   Graduate Council Chair   Date

_____   _____
College Dean   Date   Faculty Senate Chair   Date

_____   _____
Honors College Dean   Date   Provost   Date

_____   _____
Core Curriculum Committee   Date   Board of Trustees Approval/Notification Date

_____   _____
University Course and Programs Committee   Date   Arkansas Higher Education Coordinating Board Approval/Notification Date

_____
Vice Provost for Distance Education   Date
(for on-line programs)

SECTION II: Profile Data - Required Information and Name Change Information

Academic Unit: ☒ Major/Field of Study   ☐ Minor   ☐ Other Unit _____ ☐ Policy

Level: ☐ Undergraduate   ☒ Graduate   ☐ Law   Effective Catalog Year <u>2014</u>

Program changes are effective with the next available catalog. See Academic Policy Series 1622.20

Current Name   **MS, Master of Science in Statistics**

College, School, Division **ARSC**   Department Code **MATH**

Current Code (6 digit Alpha) **STATMS**   Proposed Code (6 digit Alpha)   **STANMS**
                                                 Prior approval from the Office of the Registrar is required.

☒ Interdisciplinary Program   CIP Code **27.0501**
                                     Prior assignment from Office of Institutional Research is required.

Proposed Name **MS, Master of Science in Statistics and Analytics**
When a program name is changed, enrollment of current students reflects the new name.

SECTION III: Add a New Program/Unit

☐   For new program proposals, complete Sections II and VII and use as a cover sheet for a full program proposal as described in 'Criteria and Procedures for Preparing Proposals for New Programs in Arkansas.' ADHE
http://www.adhe.edu/divisions/academicaffairs/Pages/academicaffairs.aspx

    ☐ Program proposal uses courses offered by another academic college, and that college dean's office has been notified. The
       signature of the dean of that academic college is required here: _____

SECTION IV: Eliminate an Existing Program/Unit

Code/Name _____   Effective Catalog Year _____

No new students admitted to program after Term: ____ Year: _____
Allow students in program to complete under this program until Term: ____ Year: _____

SECTION V: Proposed Changes to an Existing Program or Program Policies

Insert here a statement of the exact changes to be made: We propose the following changes to the M.S. degree in Statistics:
a. change the name to Statistics and Analytics
b. change the program and course code from STAT to STAN
c. change the location of the program from Fulbright College to the Graduate School
d. add six areas of study: statistics; business analytics; operations analytics; computational analytics; educational statistics & psychometrics; and quantitative social science.

Check if either of these boxes apply and provide the necessary signature:

☐ Program change proposal adds courses offered by another academic college, and that college dean's office has been notified. The signature of the dean of that academic college is required here: _____

☐ Program change proposal deletes courses offered by another academic college, and that college dean's office has been notified. The signature of the dean of that academic college is required here: _____

Check all the boxes that apply and complete the required sections of the form:

☒ Change of Name and Code (Complete only sections I, II, V and VII.)
☐ Change Course Requirements: (Complete all sections of the form except "Proposed Name" in II, section III, and section IV.)
☐ Change Delivery Site/Method (Complete all sections of the form except "Proposed Name" in II, section III, and section IV.)
☐ Change Total Hours (Complete all sections of the form except "Proposed Name" in II, section III, and section IV.)
☐ Change in Program Policies

SECTION VI: Justification

Justify this change and state its likely effect on any other degree program (including those outside the school or college). Identify any program or program components (other than courses) to be eliminated if this program is implemented. (Program and course change forms must also be submitted for such related changes.)

We are anticipating the development of cross-college interdisciplinary M.S. and Ph.D. degree programs in Statistics and Analytics, to pull from the considerable resources across campus and to create more collaborative and interdisciplinary teaching, service and research teams. To accomplish this change for the M.S. program, we are proposing to move the current STATMS degree from Fulbright College to the Graduate School, where cross-college interdisicplinary graduate degrees are housed. We are also proposing a new name that reflects the offering of six areas of study: statistics; business analytics; operations analytics; computational analytics; educational statistics & psychometrics; and quantitative social science.

SECTION VII: Catalog Text and Format

In the box below, insert the current catalog text which is to be changed, with changes highlighted with the color yellow. Include all proposed changes identified in Section V.   Only changes explicitly stated in Section V will be considered for approval by the University Course and Programs Committee, the Graduate Council and the Faculty Senate. If you are proposing a new program, give proposed text with all of the elements listed below. If you are proposing modified text, include these elements as appropriate.

Include the following elements, in order, in the catalog text for proposed undergraduate program(s) or program changes:

- State complete major/program name
- Briefly define or describe the major/program or discipline.
- Identify typical career goals or paths for graduates. (Optional)
- State admission requirements (if any) for entry or entry into upper/advanced level of major/program.
- Identify location in catalog of university, college/school, and department/program requirements which the student must meet in addition to hours in the major, but do not restate these requirements.
- State course requirements in the major and any allied areas, giving number of hours and specific courses; specify electives or elective areas and give numbers of hours and courses in elective pools or categories; identify any other course requirements.
- State any other requirements (required GPA, internship, exit exam, project, thesis, etc.).
- Identify name and requirements for each concentration (if any).
- Specify whether a minor or other program component is allowed or required and provide details.
- State eight-semester plan requirements

For minors, state requirements in terms of hours, required courses, electives, etc.

For graduate program/units, include elements (as needed) parallel to those listed for undergraduate programs above.

For Law School program/units, prepare text consistent with current catalog style.

For centers, prepare text consistent with current catalog style.

Statistics and Analytics (STAN)

Mark Arnold
Program Director

Degrees Conferred:

M.S., Ph.D. (STAN)

Pre-requisites to Degree Programs:

In addition to the requirements of the Graduate School, applicants for admission to the M.S. and Ph.D. programs in Statistics and Analytics must submit a) three letters of recommendation from persons familiar with the applicant's previous academic and professional performance and b) official test scores as specified for the applicant's area of interest. Admission to the program will be approved by a standing committee consisting of one faculty member from each of the 6 tracks.

Master of Science Degree in Statistics and Analytics

The Master of Science degree program in statistics and analytics is intended to provide training for professional careers, or to serve as a foundation for pursuing a Ph.D. degree. Toward this end, students with degrees other than in mathematics, as well as mathematics majors, are encouraged to apply for admission. Requirements for this degree may be satisfied by completing course work in one of the following areas of study: Statistics; Business Analytics; Computational Analytics; Educational Statistics & Psychometrics; Quantitative Social Sciences; or Operations Analytics

Requirements for the Master of Science Degree

A candidate must complete a minimum of 30 hours of graduate credits that will include a minimum of one course (three hours) in each of the following areas: Regression I or Decision Support Analytics; Statistical Methods; Multivariate Analyses; and Experimental Design. Specific courses that will meet these requirements will be chosen from a list developed by the program faculty and approved by the student's advisory committee in consultation with the student.

In addition, a candidate must complete the deficiencies and 18 additional hours listed below for his/her chosen area of study:

Statistics Area of Study

- Undergraduate deficiencies: Calculus II, Data Structures, Linear Algebra
- One course from each of these areas as approved by the student's advisory committee: Theory of statistics (probability); statistical inference; analysis of categorical responses; statistical computation
- Six additional hours of electives OR
- Six hours of thesis credit and submission of an acceptable thesis

- Written comprehensive exam (non-thesis) or defense of the thesis

Business Analytics Area of Study

- Undergraduate deficiency: Calculus I
- One course each from the areas of database analysis and data mining as approved by the student's advisory committee
- Twelve additional hours of electives OR
- Six additional hours of electives, six hours of thesis credit and submission of an acceptable thesis
- Written comprehensive exam (non-thesis) or defense of the thesis

Operations Analytics Area of Study

- Undergraduate deficiencies: Calculus I, Linear Algebra and Basic Probability and Statistics
- One course each from each of these areas as approved by the student's advisory committee: Simulation; optimization I; data mining
- Nine additional hours of electives OR
- Three additional hours of electives, six hours of thesis credit and submission of an acceptable thesis
- Written comprehensive exam (non-thesis) or defense of the thesis

Computational Analytics Area of Study

- Undergraduate deficiencies: Calculus I, Linear Algebra and Algorithms
- One course each from each of these areas as approved by the student's advisory committee: data mining, database, scientific computing
- Nine additional hours of electives OR
- Three additional hours of electives, six hours of thesis credit and submission of an acceptable thesis
- Written comprehensive exam (non-thesis) or defense of the thesis

Educational Statistics & Psychometrics

- Undergraduate deficiencies: Calculus I and Linear Algebra
- One course each from the areas of measurement and educational assessment as approved by the student's advisory committee
- Twelve hours of electives as approved by the student's advisory committee OR
- Six hours of electives or six hours of thesis credit and submission of an acceptable thesis
- Written comprehensive exam (non-thesis) or defense of the thesis

Quantitative Social Science Area of Study

- Undergraduate deficiencies: Calculus I, Linear Algebra and Statistical Probability

- One course each from each of these areas as approved by the student's advisory committee: Generalized linear models and extensions; multivariate techniques; time series analysis; panel data analysis
- Six hours of electives to include two of the following: cost benefit analysis; GIS and spatial analysis; multilevel modeling; social network analysis OR
- Six hours of thesis credit and submission of an acceptable thesis
- Written comprehensive exam (non-thesis) or defense of the thesis

SECTION VIII: Action Recorded by Registrar's Office

PROGRAM INVENTORY/DARS

PGRM _____   SUBJ _____   CIP _____   CRTS _____

DGRE _____   PGCT _____   OFFC&CRTY VALID _____

REPORTING CODES

PROG. DEF. _____   REQ. DEF.

Initials _____   Date _____

Distribution

Notification to:
(1) College   (2) Department   (3) Admissions   (4) Institutional Research   (5) Continuing Education   (6) Graduate School
(7) Treasurer   (8) Undergraduate Program Committee

8/19/13