**LETTER OF NOTIFICATION - 10**

**GRADUATE CERTIFICATE PROGRAM**

(12-18 SEMESTER CREDIT HOURS)

1. Institution submitting request: University of Arkansas Fayetteville

2. Contact person/title: Terry Martin, Vice Provost for Academic Affairs

3. Phone number/e-mail address: 479-575-2151; tmartin@uark.edu

4. Proposed effective date: Fall 2017

5. Name of proposed Graduate Certificate Program (Program must consist of 12-18 semester credit hours from existing graduate courses). Statistics and Analytics

6. Proposed CIP Code: 27.0501

7. Reason for proposed program implementation: There is currently a very high demand for capable employees in data science. This certificate would satisfy the shared core requirements for any area of concentration in the STAN MS degree, currently offered at this campus. Students working toward or receiving this certificate would be high probability recruits for our STAN MS program.

8. Provide the following:

 a. Curriculum outline - List of courses in new program – Underline required courses

One of: STAT 4003/4001L Statistical Methods, ESRM 6403 Ed Stat and Data Processing, ISYS 5503 Decision Support and Analytics, PLSC 5913 Research Meth Political Science, PSYC 5133 Inferential Statistics for Psychology, SOCI 5013 Advanced Social Research.

One of: STAT 5313 Regression Analysis, INEG 5393 Applied Regression Analysis for Engineers, ISYS 5623 Multivariate Analysis, PLSC 5943 Advanced Research Methods in Political Science, PSYC 5143 Advanced Descriptive Statistics for Psychology, or SOCI 5313 Advanced Data Analysis.

One of: STAT 5353 Meth Multivariate Analysis, ISYS 5723 Advance Multivariate Analysis, ESRM 6453 Multivariate Analysis.

One of: STAT 4373 Experimental Design, INEG 5333 Design of Industrial Experimental Experiments, ESRM 6413 Experimental Design

 b. Total semester credit hours required (Program range: 12-21 graduate semester credit hours): 12 hours

 c. New courses and course descriptions: No new courses required.

 d. Program goals and objectives: Provide students with the fundamental statistical framework necessary to use and understand applied data science in the workplace or in further study. To provide and foster knowledge, practices and skills common to traditional first year graduate level programs in Statistics, Biological Analytics, Business Analytics, Operations Analytics, Computational Analytics, Quantitative Social Sciences, and Educational Statistics and Psychometrics.

To provide current practitioners a thoughtful and tested curricula to extend their skills and knowledge into data science.

 e. Expected student learning outcomes

1. Fundamental language of statistics (probability distributions, mean, variance, covariance, hypothesis testing, etc.)
2. Thorough knowledge of linear regression modeling and analysis.
3. Proficiency with regression in the context of many possibly collinear variables.
4. Thorough knowledge of the theory and design of statistical experiments.
5. Capability with software tools enabling general purpose statistical analysis.

 f. Documentation that program meets employer needs: See employer survey attached (for proposal to add concentrations).

 g. Student demand (projected enrollment) for program: We expect enrollment to exceed 12 new students per year after the first year.

 h. Name of institutions offering similar program and the institutions used as a model to develop the proposed program: Harvard (Data Science Certificate), Colorado State (Applied Statistics Certificate, Data Analysis Certificate), Purdue (Certificate in Applied Statistics), University of Washington (Certificate in Data Science).

 i. Scheduled program review date (within 10 years of program implementation): 2021-

 2022.

9. Provide documentation that proposed program has received full approval by licensure/certification entity, if required. (A graduate certificate offered for teacher/educator administrator licensure must be reviewed/approved by the Arkansas Department of Education prior to consideration by the Coordinating Board; therefore, the Education Protocol Form must be submitted to ADHE along with the Letter of Notification.)

 Not required

10. Institutional curriculum committee review/approval date: March 9, 2016.

11. Will this program be offered on-campus, off-campus or via distance delivery? Indicate mode of distance delivery. On campus and online delivery.

12. Identify off-campus location. Provide a copy of e-mail notification to other institutions in the area of the proposed off-campus program offering and their responses; include your reply to the institutional responses.

13. Provide additional program information if requested by ADHE staff.

President/Chancellor Approval Date:

Board of Trustees Notification Date:

Chief Academic Officer: Date: