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| For Academic Affairs and Research Use Only |
| CIP Code:  |  |
| Degree Code: |  |

**Letter of Notifications**

**[ ] Undergraduate Curriculum Council**

**[X] Graduate Council**

Signed paper copies of proposals submitted for consideration are no longer required. Please type approver name and enter date of approval.

Email completed proposals to curriculum@astate.edu for inclusion in curriculum committee agenda.

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| Hong Zhou | 11/1/2019 |

**Department Curriculum Committee Chair** |

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**COPE Chair (if applicable)** |
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| Amanda Lambertus | 11/1/2019 |

**Department Chair:**  |

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**Head of Unit (If applicable)**   |
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| John Hershberger | 11/5/2019 |

**College Curriculum Committee Chair** |

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**Undergraduate Curriculum Council Chair** |
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| Lynn Boyd | 11/7/2019 |

**College Dean** |

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**Graduate Curriculum Committee Chair** |
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**General Education Committee Chair (If applicable)**   |

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**Vice Chancellor for Academic Affairs** |

**If you require to fill out a Letter of Notification, please email** **curriculum@astate.edu** **or contact Academic Affairs and Research at (870) 972-2030 for guidance PRIOR TO submitting these through the curricular process.**

1. **Contact Person** (Name, Email Address, Phone Number)

Karen Wheeler, kwheeler@astate.edu, (870) 972-2030

Ferebee Tunno, ftunno@astate.edu, (870)-972-8135

Amanda Lambertus, alambertus@astate.edu, 870-680-8136

**Bulletin Changes**

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| **Instructions**  |
| **Please visit** [**http://www.astate.edu/a/registrar/students/bulletins/index.dot**](http://www.astate.edu/a/registrar/students/bulletins/index.dot) **and select the most recent version of the bulletin. Copy and paste all bulletin pages this proposal affects below. Follow the following guidelines for indicating necessary changes.** **\*Please note: Courses are often listed in multiple sections of the bulletin. To ensure that all affected sections have been located, please search the bulletin (ctrl+F) for the appropriate courses before submission of this form.** - Deleted courses/credit hours should be marked with a red strike-through (~~red strikethrough~~)- New credit hours and text changes should be listed in blue using enlarged font (blue using enlarged font). - Any new courses should be listed in blue bold italics using enlarged font (***blue bold italics using enlarged font***)*You can easily apply any of these changes by selecting the example text in the instructions above, double-clicking the ‘format painter’ icon 🡪 , and selecting the text you would like to apply the change to.**Please visit* [*https://youtu.be/yjdL2n4lZm4*](https://youtu.be/yjdL2n4lZm4) *for more detailed instructions.* |

On page 45 in 2019-20 Graduate Bulletin:

**GRADUATE CERTIFICATES**

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| --- |
| Addiction Studies  |
| Clinical Mental Health Counseling  |
| Computer Science Education  |
| Cyber Security  |
| Data Science  |
| Dyslexia  |
| Building Level Administration  |
| Curriculum Director  |
| Gifted, Talented, and Creative Director  |
| Instructional Specialist - Gifted, Talented and Creative  |
| K-12 Special Education  |
| Superintendent  |
| Family Nurse Practitioner  |
| Health Communication  |
| High Performance Computing  |
| History  |
| Marketing  |
| Nurse Administration  |
| Play Therapy |
| Statistics |

On page 278 in 2019-20 Graduate Bulletin:

Graduate Certificate in Statistics

Statistics
Graduate Certificate

|  |  |
| --- | --- |
| University Requirements: | Sem. Hrs. |
|  See Graduate Degree Policies for additional information (p. 39) |  |
| Core Courses: |  |
|  STAT 6613, Nonparametric Statistics | 3 |
|  Select one of the following sequences:STAT 6653, Data Analysis I (3 hrs) ANDSTAT 6663, Data Analysis II (3 hrs)  ORSTAT 6703, Statistical Analysis I (3 hrs) ANDSTAT 6713, Statistical Analysis II (3 hrs) | 6 |
| Sub-total | 9 |
| Electives: | Sem. Hrs. |
|  Select one of the following:STAT 5483, Statistical Methods Using RSTAT 6623, Statistical Methods With SAS Programming | 3 |
|  Select one of the following:STAT 6833, BiostatisticsSTAT 6673, Design of ExperimentsSTAT 6643, Multivariate AnalysisSTAT 6433, Time Series Analysis | 3 |
| Total Required Hours: | 15 |

**LETTER OF NOTIFICATION - 10**

**GRADUATE CERTIFICATE PROGRAM**

(12-21 SEMESTER CREDIT HOURS)

 1. Institution submitting request: Arkansas State University

1. Contact person/title: Karen Wheeler, Senior Associate Vice Chancellor for Academic Affairs
2. Phone number/e-mail address: (870) 972-2030, kwheeler@astate.edu
3. Proposed effective date: Summer 2020
4. Name of proposed Graduate Certificate Program (Program must consist of 12-21 semester credit hours from existing graduate courses). Graduate Certificate in Statistics
5. Proposed CIP Code: 27.0501
6. Reason for proposed program implementation:

There is a growing need for the qualified “statistician/statistical analyst” to analyze the increasing amounts of data collected in business, industry, and government. The Graduate Certificate in Statistics is designed to give students a strong background in statistical methodology and data analysis in preparation for opportunities in the work force or for graduate studies.

 The Bureau of Labor Statistics projects that jobs for “statisticians/ statistical analysts” will grow by 30% between 2018 and 2028, much faster than the average for all occupations. Corporations, non-profit organizations, governmental agencies, educational and research institutes, health care, etc. will need these workers to analyze the increasing volume of digital and electronic data.

In fact, many “statisticians/statistical analysts” work under the titles as data scientist, quantitative analyst, business analyst, statistical researcher, financial analyst, economist, actuarial analyst, biostatistician, etc. Please see the following:

 <https://www.bls.gov/ooh/math/mathematicians-and-statisticians.htm>

1. Provide the following:
	1. Curriculum outline - List of courses in new program – Underline required courses

|  |  |
| --- | --- |
| University Requirements: | Sem. Hrs. |
|  See Graduate Degree Policies for additional information (p. 39) |  |
| Core Courses: |  |
|  STAT 6613, Nonparametric Statistics | 3 |
|  Select one of the following sequences:STAT 6653, Data Analysis I (3 hrs) ANDSTAT 6663, Data Analysis II (3 hrs)  ORSTAT 6703, Statistical Analysis I (3 hrs) ANDSTAT 6713, Statistical Analysis II (3 hrs) | 6 |
| Sub-total | 9 |
| Electives: | Sem. Hrs. |
|  Select one of the following:STAT 5483, Statistical Methods Using RSTAT 6623, Statistical Methods With SAS Programming | 3 |
|  Select one of the following:STAT 6833, BiostatisticsSTAT 6673, Design of ExperimentsSTAT 6643, Multivariate AnalysisSTAT 6433, Time Series Analysis | 3 |
| Total Required Hours: | 15 |

* 1. Total semester credit hours required (Program range: 12-21 graduate semester credit hours) 15
	2. New courses and course descriptions N/A
	3. Program goals and objectives
1. Students will use their skills to become more competitive in the job market in fields such as business, industry, and government.
2. Students will learn a combination of applied and theoretical statistics increasing accessibility to a wider variety of fields.
3. Students will get hands-on experience with a variety of statistical software.
	1. Expected student learning outcomes

After completing the courses required for the certificate, students will be able to

1. Explain and use advanced statistical theory and content knowledge.
2. Implement non-parametric statistical methods to problems where traditional distributional assumptions may not apply.
3. Use professional statistical software and other appropriate tools for data exploration, cleaning, validation, analysis, and communication.
	1. Documentation that program meets employer needs

 According the 2001-2017 Workforce Analysis report recently conducted by Arkansas Department of Higher Education, the professional- and knowledge-intensive industries offered the most pay and career growth, such as the qualified statisticians/statistical analysts working in finance and insurance, health care and assistance, professional, scientific and technical services, information, etc. For example, some statisticians/statistical analysts working as “Economists” are among the highest earners. See <https://static.ark.org/eeuploads/adhe/Workforce-Analysis.pdf> .

* 1. Student demand (projected enrollment) for program Approximately 15 per year.
	2. Name of institutions offering similar program and the institution(s) used as a model to develop the proposed program

The University of Arkansas at Little Rock (UALR) offers a graduate certificate in applied statistics. According to their website (<https://ualr.edu/mathematics/gcas>), their program requirements are as follows:

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* CORE COURSES (9 HOURS)
* STAT 7340 Advanced Statistical Methods I
* STAT 7341 Advanced Statistical Methods II
* STAT 5342 Introduction to SAS
* ELECTIVE COURSES (6 HOURS)

Students must take 6 hours at the 5000–level or above. Courses must be related to statistics or directly support statistics. Elective courses can also be statistics courses from a specific discipline offered by other departments. The director of the program must approve elective courses for credit toward the Graduate Certificate in Applied Statistics.

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Our proposed certificate is very similar to UALR’s in that it requires a total of 15 hours (9 core and 6 elective). Our certificate also is constructed in a way that students are forced to take one software course as well as two semesters of a statistical methods (i.e., data analysis) course.

* 1. Scheduled program review date (within 10 years of program implementation)

 2029

1. 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.)

 N/A

1. Institutional curriculum committee review/approval date:
2. Will this program be offered on-campus, off-campus or via distance delivery? If yes, indicate mode of distance delivery. On-campus
3. Identify off-campus location. Provide a copy of e-mail notification to other institutions in the area of the proposed off-campus program offering. N/A
4. Provide additional program information if requested by ADHE staff.

President/Chancellor Approval Date:

Board of Trustees Notification Date:

Chief Academic Officer: Date: