

Educational Statistics and Research Methods Graduate Certificate 2017-2018

The University of Arkansas Graduate Certificate program in educational statistics and research methods prepares graduates for conducting applied research in social science, behavioral science, and education-related fields. Completion of the certificate program is designed to strengthen professionals' quantitative research methods skills for the purposes of designing studies, analyzing and interpreting data, and critically evaluating other research studies. The primary learning goals of the EDST certificate program are centered around the identification of statistical procedures, analyses of data, critiquing research studies, and collaborating effectively with others.

An assessment of the effectiveness of the program would include students' ability to:

1. Identify appropriate research designs for research questions
2. Conducting statistical analyses for research hypotheses
3. Understand the strengths, weaknesses, and appropriateness of different statistical procedures
4. Critique statistical analyses completed by others
5. Submit research proposals or manuscripts to professional conferences and journals
6. Complete oral research presentations

In order to assess the effectiveness of the student training in the EDST graduate certificate program this year, we aggregated student data from research projects, professional conference presentations, journal articles, grant submissions, and academic or professional awards.

Assessment Information

Course-Based Data:

The quality of course-based research projects and components of take-home exams provided data for the learning outcomes of identifying appropriate designs, conducting statistical analyses, and identifying strengths, weaknesses, and appropriateness of statistical procedures. Student projects and take-home examinations have been averaged (i.e., their final grades) for coursework and were rated a 4 if they earned a mastery level of 90% or higher on their project, 3 for 80-89%, 2 for 70-79%, 1 for 60-69%, and a 0 for less than 60%. Student projects and take-home examinations ratings are provided for the six courses (see below) completed for the certificate.

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Program of Study		
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ESRM 6403	Educational Statistics and Data Processing (Sp, Su, Fa)	3
ESRM 6413	Experimental Design in Education (Sp)	3
ESRM 6423	Multiple Regression Techniques for Education (Sp)	3
ESRM 6453	Applied Multivariate Statistics (Fa)	3
Select one of the following:		3

ESRM 5653	Educational Assessment (Irregular)	
ESRM 6653	Measurement and Evaluation (Fa)	
Select one of the following:		3
ESRM 6513	Hierarchical Linear Modeling	
ESRM 6523	Structural Equation Modeling	
ESRM 6553	Advanced Multivariate Statistics	
ESRM 699V	Seminar (Irregular)	
Total Hours		18

There were seven students actively taking classes toward a certificate in educational statistics, completing 11 classes in total with an overall course average of 3.818.

Identifying Research Designs, Conducting Statistical Analyses, Evaluation Procedures

Learning Objectives 1, 2, and 3	Average	Minimum	Maximum
Core Statistical Design Courses	3.83	3.00	4.00
Measurement and Psychometrics	3.75	3.00	4.00
Advanced Statistical Designs	4.00	4.00	4.00

Active Research:

One graduate certificate student who completed is currently the Dean of graduate studies at Northeastern State University in Oklahoma who completed this certificate to strengthen her research skills. One other student completed and is in the interview stage for a faculty position in community health promotions. The remaining five are “in progress.” Three of these students are active researchers from the Exercise Science and Community Health Promotion Ph.D. programs, presenting at conferences and submitting articles for publications. Presentation/publication data for all students were not obtained.

Changes Planned Based on Assessment Findings

Student performance in classes and on skills-based evaluations have been appropriate. These students have also been active in research. No changes to curriculum or research incentives are planned, however with a planned “research merger” occurring between ESRM and some of the HHPR faculty, we anticipate larger participation in our EDST certificate by students in the kinesiology, exercise science, and community health promotions programs. Most of our certificate students are simultaneously completing doctoral degrees, and use the completion of a certificate specializing in a research methodology as a supplement to their training that can give them an edge in the employment market. Thus, they integrate the course completion for the certificate into their programs of study for their doctoral degree and may not take certificate

courses every semester. When there is a semester that they do not take a certificate course, their status in the certificate is automatically changed to “discontinued.” This is an issue that has occurred for all of our graduate certificates, and one we are addressing with the graduate school associate dean for the 2018-2019 academic year. We hope this will increase the number of admissions (prior to their last semester at the university).