THE UNIVERSITY OF NORTH CAROLINA AT ASHEVILLE
FACULTY SENATE

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Statement of Faculty Senate Action:

**APC Document 12 (MATH): Add STAT 329, Big Data Analytics, cross-listing it with CSCI 329**

**Effective Date: Fall 2016**

**1. Add:** On page 228, new course, **STAT 329, Big Data Analytics:**

**329 Big Data Analytics (CSCI 329) (3)**
The analysis of unstructured and large data sets. Topics include: preparing data for deeper analysis, breaking down the process into manageable steps, regression techniques and Bayesian approach for dealing with multivariate data, and Exploratory Data Analysis with statistics software such as SAS, R, or similar packages. Prerequisites: STAT 185 or 225, CSCI 181 or 182, or permission of instructor. Even years Spring.

**2. Add:** On page 114, new course, **CSCI 329, Big Data Analytics:**

**329 Big Data Analytics (STAT 329) (3)**
The analysis of unstructured and large data sets. Topics include: preparing data for deeper analysis, breaking down the process into manageable steps, regression techniques and Bayesian approach for dealing with multivariate data, and Exploratory Data Analysis with statistics software such as SAS, R, or similar packages. Prerequisites: STAT 185 or 225, CSCI 181 or 182, or permission of instructor. Even years Spring.

**Impact Statement:** Students will now be able to have an additional statistics elective. Given that the department's 300-level statistics courses are becoming more popular and filling up, this class will offer an additional option for students to complete their Mathematics minor. The department has scheduled the class since 2014 and has been able to take care of the resource needs (computer class room, instructor, enrolment) of this course. The department does not foresee any new resource implications.

**Rationale:** "Big Data" has become an important topic in recent years due to the availability of very large data sets. The science of mining large data sets has become a vital research tool in many areas. Thus it is essential that UNC Asheville stays abreast in these developments and offers students the opportunity to learn how to manage large data sets. The department has offered this class two times (Spring 2014 and Spring 2016) and has shown that it was / is a popular elective. We plan on offering it in the future, and thus need to include it into the catalog.

There are two reasons to include "or permission of the instructor" under the prerequisites. Upper level statistics courses should be accessible to all students who are interested in the subject and have a good chance of success in the course. This university (and higher education in general) has a number of courses that give students a good foundation in statistics, examples from UNCA include PSYC 201, ATMS 405, SOC 335, … Students need to know that there is an opportunity to take this class even if they did not take the department's introductory statistics class. A similar argument may be made for the computer science prerequisite. Many students have had sufficient exposure to computers and quantitative software to be well equipped to succeed in this class without actually taking UNCA's formal programming class.

The second reason to include "or permission of the instructor" is the computer science prerequisite. Previously this course had students from a variety of disciplines, many of whom had not taken a programming course, successfully complete the class. The department wants to encourage all qualified students interested in this topic to be able to sign up for the class even if they did not have specific credit for specific UNCA courses. Advertising to those who do not have the prerequisite to the course that they are still welcomed is important.