College of Charleston

66 George Street
Charleston, South Carolina 29424-0001

Office of the President

January 31, 2008

Dr. Gail M. Morrison, Deputy Director
Academic Affairs and Licensing Division
South Carolina Commission on Higher Education
1333 Main Street, Suite 200
Columbia, SC 29201

Dear Dr. Morrison,

Enclosed you will find a program modification summary for adding a Concentration in Statistics to the existing Bachelor of Science in Mathematics major. Students majoring in mathematics at the College of Charleston must complete a list of core courses in one of five concentrations. The Mathematics Department proposes offering students a sixth way to complete the mathematics major with a new concentration in statistics. We would hope that your Commission Staff offers a favorable reply to this modification.

If you have any questions, please don't hesitate to contact me. Thank you.

Sincerely,

P. George Benson

COLLEGE OF CHARLESTON

Requesting to modify an existing program

Bachelor of Science in Mathematics, adding a Concentration in Statistics

P. George Benson, President

January 28, 2008

COLLEGE OF CHARLESTON

REQUESTING TO MODIFY AN EXISTING PROGRAM

Bachelor of Science

in

Mathematics

Adding a Concentration in Statistics

Submitted to the South Carolina Commission on Higher Education

School of Science and Mathematics
College of Charleston

January 28, 2008

Program Modification: Bachelor of Science Degree in Mathematics

Add Concentration in: Statistics

Proposed Date of Implementation: August 2008

Explanation of the Structure of the Bachelor of Science Degree in Mathematics: The Mathematics Program at the College of Charleston offers students five ways to complete a major in mathematics. Every student majoring in mathematics must complete both a 22-25 hour list of core courses and another 21-36 hours in one of five concentrations -- Applied Math, Actuarial Studies, Discrete Math, Pure Math, or Secondary Education. In contrast with some other departments offering majors and concentrations, it is not possible to obtain a degree in mathematics at the College without completing one of these concentrations, and no student can be credited for completing more than one concentration. The Mathematics Department proposes offering students a sixth way to complete the mathematics major with a new concentration in statistics. This 21-hour concentration would require only one additional new course to our catalog, MATH 475 Statistical Consulting.

Justification for the Proposed Program: Statistics is rapidly becoming an important area for success in many endeavors. Mining, analyzing, and making sense of enormous data sets are challenges faced in today's highly technological world: from pharmaceutical research, to search engines; from academic research to environmental science. Practicing statisticians are highly sought after and well paid for careers in business, industry, biomedicine, environmental science, as well as in academics and private research facilities. Currently, the only concentration with an emphasis in statistics is the Actuarial Studies concentration. However, this concentration requires courses in business and economics that many mathematics students do not want to pursue. This proposal creates a concentration for students desirous of pursuing careers in statistics by including all of the necessary statistics background and eliminating the economics and business requirements. In addition, Math 311, Advanced Calculus, is added to provide the necessary preparation for students who wish to pursue graduate degrees in statistics. Moreover, the Mathematics Department has hired two new PhD Statisticians and is currently recruiting another.

Anticipated Program Demand: The Mathematics Department anticipates that there will be a demand for the Statistics Concentration among mathematics students and that this concentration could eventually be the most heavily populated of the concentrations. In addition, some students already majoring in one of the other sciences which use statistics, may decide to complete a major in mathematics with this new concentration. In particular, students in the Discovery

Informatics program are required to take a large number of statistics courses and may choose to double major in mathematics if the proposed concentration becomes available.

Extent to which Proposed Program Duplicates Programs in the State:
Currently there exist undergraduate programs in statistics at the University of South Carolina and an undergraduate program in mathematics with a concentration in probability and statistics at Clemson University. The Mathematics Department does not anticipate drawing students away from other universities with the addition of the statistics concentration. The new concentration is intended to provide a marketable career-oriented option to mathematics students at the College. Moreover, the addition of this new concentration requires nearly no new costs.

Extent to which Proposed Program Duplicates Programs at the College of Charleston: The proposed concentration in statistics does not duplicate any other program offered at the College. Several of the courses in proposed program are already core courses in the Discovery Informatics Program and/or electives in the Mathematics Department.

Relationship of the Proposed Program to other Institutions via Inter-institutional Cooperation: While the Medical University of South Carolina offers courses leading to graduate degrees in Biometry, there is no plan to have the MUSC program overlap in any way with the proposed concentration in statistics.

New Costs Associated with Proposed Program: The new concentration in statistics includes only one new course, MATH 475 Statistical Consulting, which will be the recommended Capstone experience for math majors in this concentration. (Math majors in other concentrations have other ways to complete their Capstone experience, e.g., a senior thesis or a Capstone seminar course.) MATH 475 is designed to provide experience in working with real data from clients who are interested in the results of the analysis. Because of the addition of this course, there will be one fewer statistics professor to teach our low-level courses each time MATH 475 is offered. The only cost associated with this program will be the adjunct replacement cost to cover one lower-level course each spring.