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## Statistics Form B: Discipline Objectives and Requirements 09/10/2004

Curriculum Committee

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## Curriculum Committee Form B: Discipline Objectives and Requirements

All changes become effective the fall semester following Campus Assembly approval.

Date:

Discipline/Division:

**I. Introductory Statement:** The mission of the discipline is to create and apply statistical methods/techniques for collecting, exploring, analyzing and communicating qualitative/quantitative information and to disseminate this knowledge through teaching, scholarly activity and outreach.

~~Uncertainty is a fact of life.~~ Statistics is the science and art of enhancing knowledge in the face of uncertainty by modeling, predictions, and decisions. ~~Therefore, it~~ is central to solutions of problems in medicine, law, industry, technology, finance, business, public policy, computing, and science in general. The need for statistics applies to almost every area of our lives.

**II. Objectives:** The statistics program provides an effective operational knowledge of the theory and methods of statistics and the application of statistical methods in a liberal arts environment. It seeks to enhance students' critical thinking in making judgments based on data and provides students with the basic knowledge and skills to make contributions to modern society. Students learn to communicate and collaborate effectively with people in other fields and, in the process, to understand the substance of these fields. The curriculum prepares students to enter graduate school or pursue careers in statistical fields at research institutions and industry.

**III. Assessment:**

**IV. Requirements for a Major:** Math 1101-1102—Calculus I-II

Stat 1601—Introduction to Statistics

or Stat 2601—Statistical Methods

Math/Stat 2501—Probability and Stochastic Processes

Stat 2611—Mathematical Statistics

Stat 3601—Data Analysis

Stat 4901—Senior Seminar

*8 additional credits in statistics courses:*

Stat 3611—Multivariate Statistical Analysis

Stat 4601—Biostatistics

Stat 4611- Statistical Consulting

Stat 4631 - Experimental Design

Stat 4651—Applied Nonparametric Statistics

~~Stat 4652—Variable Topics in Statistics~~

Stat x993—Directed Study in Statistics

*A minimum of 4 credits to be chosen from:*

Math 2101—Calculus III.

Math 2111—Linear Algebra

Math 2202—Mathematical Perspectives

Math 3201—Analysis

Math 3401—Operations Research

Math 3501—Applied Deterministic Modeling for Management Science

Math 3502—Applied Probabilistic Modeling for Management Science

CSci 1211—Introduction to Problem Solving with Java

CSci 1301—Problem Solving and Algorithm Development I

CSci 1302—Problem Solving and Algorithm Development II

Econ 3501—Introduction to Econometrics

Pol 3101—Political Science Analysis

Psy 3601—Quantitative Methods in Psychology

Soc 3101—Research Methodology I

Soc 3102—Research Methodology II

Required courses may not be taken S-N unless offered S-N only. Other courses with faculty approval

Students planning to pursue graduate work in statistics or biostatistics should complete Math 2101—Calculus III and consider taking Math 2202—Mathematical Perspectives and Math 3211—Analysis for Ph.D. preparation.

**V. Requirements for a Minor:** Stat 1601—Introduction to Statistics

or Stat 2601—Statistical Methods

Stat 3601—Data Analysis

A minimum of 16 additional credits from courses listed in the major requirements section of approved courses, with at least one course with a Stat designator.

**VI. Requirements for Teacher Preparation:**

**VII. Other heading (include heading title) :**