San José State
UNIVERSITY

Department of Mathematics

M.A. Mathematics, Emphasis in Statistics

This degree is recommended for students interested in a career as a statistician or students interested in other occupations, which require the use and understanding of statistical methods. The degree will prepare students for a variety of careers where they will apply statistics in business, government, or industry. Most jobs as a statistician require a Master's degree. The MA Math Emphasis in Statistics will allow students who have received a BS in Statistics or Applied Math to pursue a Master's degree in Statistics thus enhancing their prospects of employment as a statistician. The MA Math Emphasis in Statistics is also designed so that students without a BS in Applied Math or Statistics can obtain this degree, helping students interested in careers outside of the field of statistics acquire the knowledge of statistical methods necessary to apply statistics to problems in their chosen field.

Requirements for Admission to Classified Standing

Admission requirements to classified standing for this program are the same as for the MA Mathematics program. The 18 semester units of required upper division math should include upper division courses in statistics and linear algebra.

Requirements for Admission to Conditionally Classified Standing

Admission requirements for conditionally classified standing for this program are the same as for the MA Mathematics program.

Requirements for Admission to Candidacy for the MA Mathematics

Requirements are the same as for the MA Mathematics except that the Specialist Exam is an individualized written or oral exam on fundamental ideas related to the Emphasis in Statistics. This exam covers the materials in Math 163, Probability and one of Math 161B, Applied Statistics or Math 164, Mathematical Statistics.

Financial Support

Students in this program can receive financial support by being a TA or a grader in the Mathematics Department.

Completing Requirements for the MA Mathematics

Both Plan A (with Thesis) and Plan B (with Writing Project) requirements are the same as in the MA Mathematics except that the thesis or writing project must be in the field of statistics.

Required Courses 18 units

Graduate Statistics Courses 12 units (selected from)

Math 261A	Regression Analysis	3 units
Math 261B	Design of Experiments	3 units

Two statistics courses chosen from Math 265 Time Series, Math 266 Survival Analysis, or another (upper division or) graduate statistics course approved by your thesis advisor of the graduate math coordinator Richard Kubelka 6 units

Other Required Courses 6 Units

Students are also required to participate in a CAMCOS project (or a pre-approved internship) for one semester. In CAMCOS a professor supervises a team of students

working on a problem provided by a sponsoring business or industry. All students will help preparing a written report and giving an oral presentation of their research at the conclusion of each CAMCOS project. Students are also required to write and give an oral defense of a thesis (or writing project) related to statistics. Both of these activities should help students develop their oral and written communication skills.

CAMCOS (or an approved internship)		**3 units**
Math 203	Applied Math, Computation, and Statistics Projects	3 units

Thesis or Writing Project (in an area related to statistics)		**3 units**
Math 298 or Math 299		3 units

Electives 12 units

Any 100- or 200- level math classes except Math 101, Math 105, Math 106, Math 107A, Math 107B, Math 201A, or Math 201B can be used as electives. With prior approval up to 6 units of upper division or graduate courses in computer science, science, engineering, economics, business or other areas related to statistics can be used as electives. In addition to the 6 required units of Math 203, 298, and 299 at most 3 additional units of Math 203 and 3 additional units of Math 298, 299 can be counted as electives.

In choosing elective courses students should keep in mind the importance of developing 1) a good background in mathematics, 2) a specific field of interest where statistics can be applied, the ability to use computers in analyzing statistical problems, and 3) the ability to communicate effectively. You will need mathematics to understand the language and theory of statistics, which is especially important when you are pursuing an advanced degree. Knowledge of a specific field where statistics can be applied will help you understand the subject matter and technical background of the problems you work on. Students in this program are encouraged to take 6 units of upper division or graduate electives in an area outside of mathematics, where statistics can be applied. Because of the widespread use of computers in statistics and the growing number of widely used software packages, statisticians in all industries will find it useful to have good computer programming skills and the ability to use statistical software. You will use the computer not only for calculations, but also to create visual displays of data. Good verbal and written communication skills will help you communicate the results of your statistical analyses effectively, such as those used in creating written and oral reports for a CAMCOS project (Math 203) and writing and defending your Master's Thesis.

A total of 12 units of 200-level courses are required for this degree (excluding Math 201A, Math 201B, Math 203, Math 298, and Math 299).

Statistics Faculty/Advisors in the Math Department

- Bremer, Martina (Ph.D., Purdue University, 2006) Statistics, Biostatistics
- Crunk, Steven (Ph.D., University of Pennsylvania, 1999) Statistics, Time Series, Business, Economic and Legal Statistics
- Kubelka, Richard (Ph.D., Stanford University, 1980) Algebraic Topology, Number Theory, Statistics
- Lee, Bee Leng (Ph.D., University of Wisconsin-Madison, 2000) Statistics, Semiparametric Inference, Survival Analysis
- Ng, Ho-Kuen (Ph.D., University of California, Berkeley, 1982) Algebra, Operations Research, Actuarial Science