BACHELOR OF SCIENCE: MATHEMATICS AND STATISTICS / MASTER OF SCIENCE: STATISTICS - DUAL DEGREE

Student Learning Outcomes

Students graduating from this program will:

- read, write, understand mathematical proofs, and construct mathematical proofs as appropriate.
- reason with and apply mathematical concepts, principles and methods; analyze and evaluate problems (both theoretical and practical) and plan strategies for their solution.
- work collaboratively with others on projects requiring mathematical knowledge and input, to function effectively in a professional workplace related to mathematics, or in a graduate program.
- demonstrate an understanding of basic statistical theory by being able to synthesize statistical concepts, assumptions, and theorems, and be able to explain how such theory gives rise to the common techniques of statistical analysis.
- will demonstrate the ability to communicate the results of a statistical analysis to a non-statistician both in writing and verbally, and to explain how these results pertain to the research question at hand.
- will exhibit the ability to decide on a statistical technique to apply to a given situation, demonstrate the ability to carry out that technique, either analytically or through the use of statistical software, and demonstrate the ability to assess the appropriateness of the technique that was applied.

This program offers students an opportunity to meet the full requirements of the BS and MS in a shorter time period than the separate degree programs. The students may complete a Bachelor of Science degree in Mathematics and Statistics in four years and the Master's degree in Mathematics the fifth year.

Admission Requirements

1. The applicant must be a UMKC undergraduate student who has completed a minimum of 60 cumulative credit hours.
2. The applicant should complete the BS/MS application form and submit it to both the undergraduate (baniyaghoubm@umkc.edu (%28baniyaghoubm@umkc.edu)) and graduate advisors (segal@umkc.edu (%28segal@umkc.edu)).
3. The applicant must satisfactorily complete the following courses:
   a. MATH 300 Linear Algebra I
   b. MATH 301 On Solid Ground: Sets and Proof, or any 400-level class that hasMATH 301 as a prerequisite. For instance, MATH 410 , MATH 420 , or MATH 402
   c. STAT 436 Introduction To Mathematical Statistics I
4. A minimum overall GPA of 3.0 is required.
5. A minimum GPA of 3.2 in Math/Stat courses is requred.

B.S. Degree Requirements (total of 33 credit hours)

As listed below, there are 24 credit hours required undergraduate courses.

Code	Title	Credits
MATH 210	Calculus I	4
MATH 220	Calculus II	4
MATH 250	Calculus III	4
MATH 300	Linear Algebra I	3
MATH 402	Advanced Analysis I	3
MATH 410	Abstract Algebra	3
STAT 441	Introduction To Mathematical Statistics II	3
The student should also take at least 9 credit hours of Math or Stat elective courses at the 400 level or above.		

M.S. Degree Requirements (total of 30 credit hours)

The following core courses are required for the completion of the M.S. degree:

Code	Title	Credits
STAT 5501	Statistical Design Of Experiments	3
STAT 5537	Mathematical Statistics I	3
STAT 5547	Mathematical Statistics II	3

STAT 5551	Applied Statistical Analysis	3
STAT 5565	Regression Analysis	3
STAT 5572	Multivariate Analysis	3

Also a total of 12 credit hours of Math of Stat elective courses at the 400 level or above must completed satisfactorily.

B.S./M.S. Degree Overlap (up to 9 credit hours)

Up to 9 credit hours of 400-level Math or Stat courses in the graduate degree can overlap with the courses taken towards satisfying the requirements for the undergraduate degree.