4+1 Program: BA Mathematics/Statistics+ MS Business Analytics

The Department of Mathematical Sciences & the College of Business offer the opportunity for students to complete both the BA in Mathematical Sciences and the MS in Business Analytics in a five-year period. The achievement of this goal requires that the student complete 9-10 semester graduate credits beyond what is required for the undergraduate math/stats major prior, as well as 3 Basic Business Knowledge (BBK) courses before the end of his or her fourth year.

This program is particularly appropriate for students entering with advanced standing for one or two semesters of Calculus. Up to 12 semester graduate credits can be taken while a student is still enrolled as an undergraduate, but graduate tuition is charged after 7 credits.

Interested students should talk to their advisor early in their undergraduate studies to make certain they are on schedule to earn the combined degrees in five years.

Application Process

Students may apply to the 4+1 program during their junior or senior year. However, students are encouraged to apply to the program before the end of their junior year to help ensure that they have the full subsequent year to begin taking appropriate courses for graduate credit, lessening the course load they will need to carry in their fifth year.

Once a completed application has been received by the Business Analytics Graduate Program Coordinator, the student will be notified quickly, generally within 30 days, whether they have been accepted into the program. The program accepts a limited number of students each year, and applicants will be considered for admission on a competitive basis.

If accepted into the program, the student meets with their undergraduate Math/Stats advisor as soon as possible to plan a course of study. After completing all requirements for the BA in Math/Stats degree, the student must complete a formal graduate application online and pay the graduate application fee to transition to graduate status.

Acceptance into the 4+1 program indicates a commitment by the College of Business to:

- Accept the student's graduate courses completed while an undergraduate student toward the MS degree
- Support the student's application for admission to the MS program through the graduate school
Minimum Academic Requirements for Acceptance to the 4+1 Program

- Completion of at least 60 undergraduate semester credits;
- Completion of at least 24 of the mathematics/statistics semester credits required for the undergraduate degree (each course passed with C or higher);
- Overall GPA of 3.3 and Mathematics GPA of 3.3;
- Completion of 2 of the 3 BBK courses.

A Complete Application Consists of

- Completed application form
- Unofficial transcript
- Short written statements of career goals and reasons for applying to the 4+1 program
- Two letters of recommendation, one of which must be from a faculty member from the Department of Mathematical Sciences (letters are to be submitted directly by recommenders)

Submit your application electronically to Academic Director MS-BANA; [http://business.uc.edu/graduate/ms-business-analytics/contact-us.html](http://business.uc.edu/graduate/ms-business-analytics/contact-us.html).

More Info about Courses

A total of 120 undergraduate credits (42 math/stats) is required for the undergraduate degree and 33 graduate credits for the MS degree. Thus students must complete an average of 30 credits per year. Students without advanced standing may find this goal easier if they take additional classes during the summer semester.

BBK Courses (9 UG credits to be taken in the first four years, as undergraduate):

- ECON1001 (3cr) Intro to Microeconomics OR ECON1002 (3cr) Intro to Macroeconomics; AND
- ACCT2081 (3cr) Financial Accounting; AND
- MKTG2080 (3cr) Intro to Marketing.

Suggested Graduate Courses from the College of Business (to be taken in the first four years, as undergraduate):

- IS6030 (2cr) Data Management; AND
- BANA6037 (2cr) Data Visualization; AND
- BANA6043 (2cr) Stat Computing; AND
- CS6065 (3cr) Cloud Computing (The prerequisites for this course would need to be met; this is an elective)
Articulation Agreement:

The following clarifies how a 4+1 plan for the MS in Business Analytics would articulate with our MATH-MT and SA tracks. Of particular concern are the students in the SA (Statistics and Actuarial Science) track, because their required coursework overlaps to some degree with MSBA requirements. Here is a summary of points:

1. The MSBA program had already agreed that STAT6031 can substitute for BANA7041 and STAT6032 can substitute for BANA7045. This works well for MT students, for whom STAT5131, 5132 are not required as part of our degree. However, students in the SA track must take STAT5131, 5132 (the equivalent undergraduate courses) for our degree, and they cannot count for both. **SOLUTION:** BANA7041 will be waived (replaced by 4 credit hours of electives) for students who have completed STAT5131 and 5132.

2. The MSBA program had agreed that STAT6021 and MATH6008 together can substitute for BANA7031. Students in the SA track are required to take STAT5021 for the math major and therefore cannot apply those credits toward the MSBA. **SOLUTION:** Students who took STAT5021 will be allowed to substitute MATH6008 (3 cr hr) alone for BANA7031 (4 cr hr) requirement (this requires that the extra credit hour is made up somewhere else).

3. STAT6045 (Statistical Computing, 3 cr hr) can substitute for BANA6043 (a required course for the MSBA)

4. The following courses will be added to the list of approved electives. Any student in their program will be allowed to choose one of these (assuming they have an adequate statistical or mathematical background):

   - STAT6043: Applied Bayesian Analysis (3 cr hr)
   - STAT6041: Time Series (3 cr hr) (like BANA7050)
   - STAT6042: Survival Analysis and Logistic Regression (3 cr hr)
   - MATH6010: Probabilistic Aspects of Financial Modeling
   - MATH6011: Computational financial mathematics (3 cr hr)

Complete Info about the MS in Business Analytics can be found at:

http://business.uc.edu/graduate/ms-business-analytics.html