Purposes of the Major

The Department of Mathematical and Computer Sciences offers a **Major in Statistical Science**. The goals of this program are to
- provide students with broad-based and coherent preparation in the various branches of the statistical sciences
- provide students with the specialized training necessary to begin careers in data analysis, actuarial science, design of experiments, biostatistics, demography, and other areas of probability and statistics
- prepare students for continued study of statistics and its applications at the graduate level

The Department also offers a **Major in Mathematics with a Concentration in Probability and Statistics** and a **Minor in Statistics**.

Advising Information

This document summarizes **major requirements** for graduating with a Bachelor of Science in Statistical Science. Consult the University Catalog for other graduation requirements, including requirements for all minors.

You are strongly encouraged to talk to a **faculty advisor** in the area of probability and statistics (listed below) as you plan your academic program.

Further information about current course offerings, as well as email addresses and office hours for faculty advisors, are available through the Department of Mathematical and Computer Sciences website at

https://msudenver.edu/math

Faculty Advisors in Probability and Statistics

Dr. Shahar Boneh	SI 3018	303-615-0740	bonehs@msudenver.edu
Dr. Ben Dyhr	SI 3017	303-615-0749	bdyhr@msudenver.edu
Dr. Nels Grevstad	SI 1053	303-615-0728	ngrevsta@msudenver.edu
Dr. Elizabeth Ribble	SI 1022	303-615-0299	emcclel3@msudenver.edu

Declaring a Major

To declare a Major in Statistical Science, you will need to meet with a faculty advisor in the Department of Mathematical and Computer Sciences, preferably one of the faculty advisors in probability and statistics. You must declare your major by the time you have completed 60 credit hours toward the degree.

Requirements for the Major [1]

Required Courses   Semester Hours
All of the following courses:

MTH 1410	Calculus I	4
MTH 2410	Calculus II	4
MTH 2420	Calculus III	4
MTH 2520	R Programming	4
MTH 3210	Probability and Statistics	4
MTH 3220	Statistical Methods	4
MTH 3270	Data Science	4
MTH 4210 [2]	Probability Theory	4
MTH 4230	Regression & Computational Statistics	4
MTH 4250	Statistical Theory	4
MTH 4290	Senior Statistics Project	1

One of the following two courses[3]:

MTH 3130	Adv. Matrix Methods for Phy. Sci.	4
MTH 3140	Linear Algebra	4

One of the following five courses:

CS 3120	Machine Learning	4
MTH 3100	Introduction to Mathematical Proofs	3
MTH 3170	Discrete Mathematics for Comp. Sci.	4
MTH 3230	Stochastic Processes	4
MTH 3510	SAS Programming	4

Total hours required ….. 48-49

[1] All courses in the major must be completed with a grade of "C-" or better and the major GPA must be at least 2.0

[2] Senior Experience course

[3] MTH 3100 and 3140 are recommended for students who intend to pursue graduate studies; MTH 3100 is a prerequisite for MTH 3140

General Advising Guidelines

The suggestions below will help you complete your course of study in a timely manner. You should make every effort to follow them:
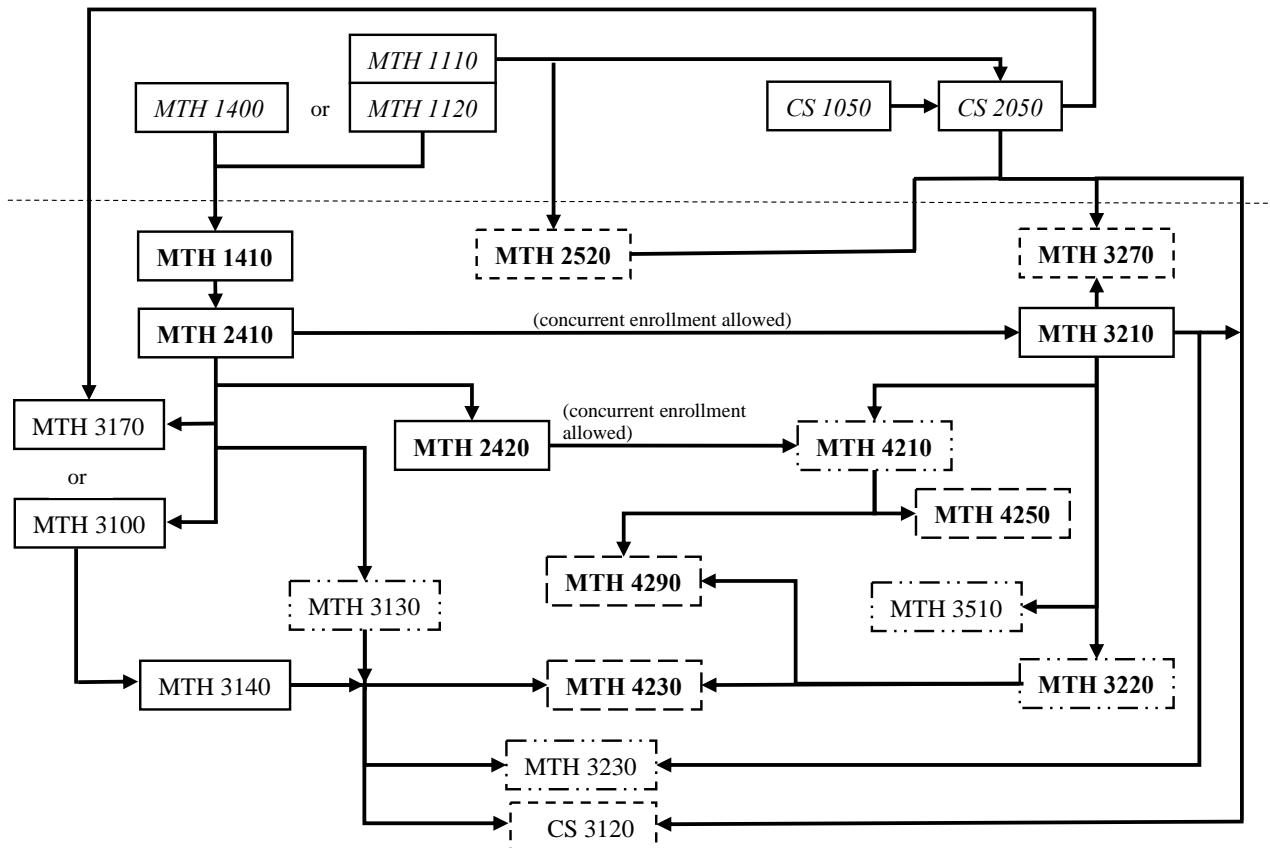
- Note that many mathematics courses are not offered every semester. Also note that, in the semesters in which they are offered, a course may only be offered during the day or in the evening. Course rotations can be found at https://msudenver.edu/math/programs/courserotations/
- Complete the courses needed to satisfy the General Studies requirements as quickly as possible.
- Plan your sequence of courses with prerequisites in mind (see flow chart, below). Note that MTH 3210 is a prerequisite for most upper-division courses in this major.
- It is recommended that you take no more than two upper-division mathematics courses in the same semester. To do so otherwise may jeopardize your grades and content understanding.

Requirements for Transfer Students

- In order for courses from another institution to satisfy a requirement for the major, the content must match, not just the name of the course.
- You must meet all the requirements for the program based on all courses taken both at other institutions and at MSU Denver.
- You must take at least eight hours of upper-division mathematics courses at MSU Denver.
- The last 12 hours of coursework toward the degree must be taken at MSU Denver unless you have taken at least 45 hours of coursework at MSU Denver.

Prerequisite Chart for Courses in the Major in Statistical Science

- *Italicized courses* are prerequisites that do not count towards the major.
- **Boldface courses** are required for the major.
- Plain text courses are electives.

- Dashed boxes indicate courses offered Spring Only
- Dot-dashed boxes indicate courses offered Fall Only
- Lined boxes indicate courses offered Spring & Fall

If you want additional information on this program or other programs offered by the Department of Mathematical and Computer Sciences visit our website at: https://msudenver.edu/math/ or call the office at (303) 615-0299.