

MSTA Major – Suggested Course Sequence

- The following courses are suggested in sequence; Prerequisites are indicated by ←
- All courses are 3 credit courses, unless mentioned otherwise.
- Please refer to the Undergraduate Catalog for a detailed description of the Statistics courses.

The Mathematics-Statistics major requires a total of 36 credits at the 2000-level or above in mathematics and statistics (in addition to MATH 2110Q or 2130Q), with at least 12 credits in each department.

The required courses for the Mathematics-Statistics major are MATH 2210Q or 3210, and 2410Q or 2420Q, and STAT 3375Q and 3445.

Students who complete the requirements for the Mathematics-Statistics major will satisfy the computer technology requirement.

To satisfy the information literacy competency and writing in the major requirement, Mathematics-Statistics majors must take one of the following courses: MATH 2194W, 2720W, 2794W, 3796W, or STAT 3494W.

Note: STAT 3494W may not be counted toward the Statistics or the Mathematics-Statistics major.

1. **STAT 1000Q or STAT 1100Q. Introduction to Statistics I. 4 credits.** Offered either Fall or Spring semesters. This course teaches/uses MINITAB. This course be taken at UConn or may have been transferred in through (a) UCONN ECE course at a CT high school; or (b) a score of 4 or 5 on the AP Stat exam. This course counts towards the GER credits, but not towards the Major credits.

Required and Suggested courses for MSTA majors are indicated

2. **STAT 2215Q. Introduction to Statistics II.** ← STAT 1000Q or STAT 1100Q. Offered either Fall or Spring semesters. This course teaches/uses MINITAB.
3. **Suggested: STAT 3025Q. Statistical Methods.** ← MATH 1122 or 1132 or 1152. Students may not receive more than three credits from STAT 3025 and STAT 3345. Offered either Fall or Spring semesters. This course requires knowledge of calculus – up to single variable differentiation and integration.
4. **Suggested: STAT 3115Q. Analysis of Experiments.** ← STAT 2215Q or STAT 3025Q or instructor consent. Credit may not be received for both STAT 3115 and 5315. Offered either Fall or Spring semesters. This course teaches/uses SAS. This course may be offered either as STAT 3115Q only, or as a combined course with STAT 5315 (which is a

graduate course). UG majors should preferably take the one that is **not** offered jointly as STAT 5315, when possible.

5. **Suggested: STAT 3515Q. Design of Experiments.** ← STAT 2215Q or STAT 3025Q or instructor consent. Credit may not be received for both STAT 3515 and 5515. Offered either Fall or Spring semesters. This course teaches/uses SAS. UG majors should preferably take the one that is **not** offered jointly as STAT 5515 for Statistics graduate students, when possible.

6. ****** Required: STAT 3375Q. Introduction to Mathematical Statistics (first semester).** ← MATH 2110 or MATH 2130. **Offered in Fall semester only.** Students may not receive credit for both STAT 3375 and STAT 5585. This course requires knowledge of multivariable calculus. Overall, students do better in this course if they have previously taken STAT 3025Q.
Important Note: UG students should not routinely take the Honors section of this course, which is a PhD level course and will be at a very high level. In exceptional cases, an UG Honors student may discuss with the instructor of STAT 3375H and perhaps obtain permission to take the Honors section.

7. ****** Required: STAT 3445. Introduction to Mathematical Statistics (second semester).** ← STAT 3375Q. **Offered in Spring semester only.** Students may not receive credit for both STAT 3445 and STAT 5685. This is the second part of the Mathematical Statistics sequence and is to be taken after STAT 3375Q.
Important Note: UG students should not routinely take the Honors section of this course, which is a PhD level course and will be at a very high level. In exceptional cases, an UG Honors student may discuss with the instructor of STAT 3445H and perhaps obtain permission to take the Honors section.

8. **STAT 3494W. Undergraduate Seminar II. 1 credit.** ← ENGL 1010 or 1011 or 3800. This is a 1 credit course to be used to get a W in the Statistics major.
Important Note: The 1 credit from STAT 3494W **DOES NOT** count towards the 24 Major credits in Statistics. Note: Mathematics-Statistics majors may alternately get their W in the major through mathematics courses.

The following are courses which students may take to fill up the required 36 credits depending on what is offered by the Department during the relevant semesters

9. **STAT 3965. Elementary Stochastic Processes. (Also offered as MATH 3170).** ← STAT 3025 or 3375 or MATH 3445. Not open for credit to students who have passed MATH 3170. Offered in the Fall semester in Statistics Department and in the Spring semester by the Mathematics Department.
Note: This is a difficult course and may be unsuitable for students who are not happy about thinking “abstract mathematical concepts”. UG students might wish to consult with the course instructor prior to enrolling. Some Masters or Ph.D. level Stat students may take this course for credit.
10. **STAT 4525. Sampling Theory.** ← STAT 3445 or instructor consent.
Note: Of late, the instructor has opened this to students after STAT 3025Q. This seems to be an accessible course for Statistics Majors.
11. **STAT 4875. Nonparametric Methods.** ← STAT 3445 or instructor consent.
12. **STAT 3675Q. Statistical Computing. 4 credits.** ← STAT 3025Q or STAT 3375Q.
Recommended preparation: An applied statistics course.
Note: Please speak with the instructor for permission to enroll.
13. **STAT 4475. Statistical Quality Control and Reliability.** ← STAT 3445. This course has not been offered often recently.
14. **STAT 4625. Introduction to Biostatistics.** ← STAT 3025 (220) or instructor consent.
Note: This seems to be an accessible course for Statistics Majors.
15. **STAT 4825. Applied Time Series.** ← STAT 3445 or instructor consent.
Note: Students seem to do well with prerequisites of STAT 3025 and STAT 3115. Teaches/uses R.
16. **STAT 4190. Field Study Internship. Either semester. Credits and hours by arrangement.** Usually, students get 3 credits, and may receive payment. Students most often take this during the summer before their senior year, provided they have the prereqs. ← Completion of Freshman - Sophomore General CLAS requirements. Completion with a grade of "C" or better of STAT 3025 or STAT 3375 and STAT 3115 or STAT 3515. **Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory), so although the credits may count towards the 24 major credits, the GPA will not be affected.** Supervised field work relevant to some area of Statistics with a regional industry, government agency, or non-profit organization. Evaluated by the field supervisor and by the instructor (based on a detailed written report submitted by the student).

17. **STAT 4389. Undergraduate Research. Either semester. Three credits. Hours by arrangement.** Open only with consent of instructor. Supervised research in probability or statistics. A final written report and oral presentation are required.

The following course is mainly intended for Engineering/EE majors. Statistics or Mathematics-Statistics majors do not usually take this

18. **STAT 3345. Probability Models for Engineers.** ← Prerequisite: MATH 2110 or 3375.
Students may not receive more than three credits from STAT 3345 and STAT 3025 or from STAT 3345 and STAT 3375. Offered either Fall or Spring semesters

Related Courses

19. For a Mathematics-Statistics major, the mathematics courses serve as Related credits for the Statistics part, while the statistics courses serve as credits for the Mathematics part. Therefore, Mathematics-Statistics majors need not fill in the Related credits portion of their plan of study.