The Major in Quantitative Sciences

Data: it’s everywhere!

What is QSS?
QuanTM offers a B.S. in Quantitative Sciences (QSS), a major that combines intensive quantitative training with studies in a specific major in the social sciences, natural sciences, or humanities. The ultimate goal of this unique major is for students to unite substantive coursework with quantitative techniques. This interdisciplinary approach enables you to learn quantitative skills that apply directly to your academic and career interests—whatever they happen to be. See the reverse side of this handout for more on what QSS is.

Why QSS?
Data is all around us, and it affects our everyday lives in ways we often take for granted. Google and Facebook analyze the content of our e-mails, searches, and posts to target ads relevant to our interests. Amazon and Netflix track our browsing and purchase history, compare it to the behavior of other users, and recommend products and movies that suit our tastes—often with uncanny accuracy.

In an increasingly data-driven world, data influences all aspects of society—from our careers to our roles as citizens to our private lives. To thrive in this environment, you must be able to work with data, draw well-reasoned inferences from it, and effectively communicate your discoveries to broader audiences.

Is QSS the right major for me?
The unique interdisciplinary approach of the QSS major ensures that, regardless of your interests, you can acquire the quantitative skills that directly apply to your academic and career interests. QSS is also accessible to students of all academic interests and mathematical backgrounds; though its course of study is rigorous, students who enter the program are not expected to have mathematical background beyond algebra and calculus.

Questions? Contact Us!
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QSS Major: Course Overview

Students must complete a minimum of 16 courses and 50 credit hours to earn a QSS degree. Please note that students may need to take more than the 16 required courses to achieve 50 credits, depending on the substantive track and number of credit hours per course.

Core Courses

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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tr>
<td>MATH 111</td>
<td>CALC I, MATH 111, MATH 115, MATH 119, or equivalent test/transfer credit is required as a part of the QSS major coursework. Students must complete this requirement before enrolling in QTM 120.</td>
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<tr>
<td>QTM 110</td>
<td>Introduction to Scientific Methods. Introduces students to the style of analytic thinking, procedures, and statistical tools required for scientific research.</td>
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<td>QTM 120</td>
<td>Math for Quantitative Sciences. Provides the necessary mathematical background for students to derive and implement common statistical modeling techniques employed in the sciences.</td>
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<tr>
<td>QTM 150 &amp; 151</td>
<td>Introduction to Statistical Computing I &amp; II. A practicum for structuring, transforming, visualizing, and modeling data with tools you will implement in your own quantitative research.</td>
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<tr>
<td>QTM 210</td>
<td>Probability &amp; Statistics. Covers the structure of probability theory, which is the foundation of statistics, and provides many examples of the use of probabilistic reasoning.</td>
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<tr>
<td>QTM 220</td>
<td>Regression Analysis. Introduces students to descriptive and inferential regression analysis by providing intuitive, applied, and formal foundations for regression.</td>
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QSS Electives

Students choose three QSS elective courses to expand their quantitative knowledge. Topics covered in the QSS major electives may include advanced statistics, technical writing, data science computing, text analysis, game theory, generalized linear model, time series analysis, experimental methods, and more.

Track Courses

What sets the QSS major apart is its emphasis on both quantitative and substantive learning. In addition to the core QTM courses, students complete a minimum of six courses in a substantive discipline of their choosing. We currently have sixteen approved tracks, and detailed information about each one can be found on its respective track brochure.

Available Tracks

- Anthropology
- Biology
- Biological Anthropology
- East Asian Studies
- Economics
- English
- History
- Informatics
- International Studies
- Latin American & Caribbean Studies
- Linguistics
- Neuroscience & Behavioral Biology
- Political Science
- Psychology
- Sociology
- Women's Studies