Interdisciplinary Doctoral Program in Statistics (http://catalog.mit.edu/interdisciplinary/graduate-programs/phd-statistics)

**Common Core**
All students in the Interdisciplinary Doctoral Program in Statistics are required to complete the common core for a total of 27 units.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.436(J) or 18.675</td>
<td>Fundamentals of Probability or Theory of Probability</td>
<td>12</td>
</tr>
<tr>
<td>IDS.190</td>
<td>Doctoral Seminar in Statistics and Data Science</td>
<td>3</td>
</tr>
<tr>
<td>18.655 or 18.6501</td>
<td>Mathematical Statistics¹ or Fundamentals of Statistics</td>
<td>12</td>
</tr>
</tbody>
</table>

Total Units 27

¹ Mathematics students must enroll in 18.655.

**Program-specific Requirements**
Each student must complete the requirements specified by their home department in the lists below by taking one subject from the Computation and Statistics category and one subject from the Data Analysis category.

### Aeronautics and Astronautics

**Computation and Statistics**
Select one of the following: 12
- 6.438 Algorithms for Inference
- 6.867 Machine Learning
- 9.520(J) Statistical Learning Theory and Applications
- 16.391(J) Statistics for Engineers and Scientists
- 16.940 Numerical Methods for Stochastic Modeling and Inference

**Data Analysis**
Select one of the following: 12
- 16.393 Statistical Communication and Localization Theory
- 16.470 Statistical Methods in Experimental Design
- IDS.131(J) Statistics, Computation and Applications

Total Units 24

### Brain and Cognitive Sciences

**Computation and Statistics**
Select one of the following: 12
- 6.438 Algorithms for Inference
- 6.867 Machine Learning
- 9.520(J) Statistical Learning Theory and Applications
- 9.660 Computational Cognitive Science

**Data Analysis**
Select one of the following: 12-15
- 7.57 Quantitative Biology for Graduate Students
- 9.073(J) Statistics for Neuroscience Research
- 9.272(J) Topics in Neural Signal Processing
- 9.583(J) Functional Magnetic Resonance Imaging: Data Acquisition and Analysis

Total Units 24-27

### Economics

**Computation and Statistics**
Select one of the following: 12
- 9.520(J) Statistical Learning Theory and Applications
- 6.867 Machine Learning

**Data Analysis**
- 14.192 Advanced Research and Communication 12
- 14.386 New Econometric Methods 12
- or 14.387 Applied Econometrics 12

Total Units 36

¹ Students may substitute a more advanced subject with permission of the program director.

### Mathematics

**Computation and Statistics**
Select one of the following: 12
- 6.252(J) Nonlinear Optimization
- 6.256(J) Algebraic Techniques and Semidefinite Optimization
- 6.438 Algorithms for Inference
- 6.867 Machine Learning
- 9.520(J) Statistical Learning Theory and Applications
- 18.337(J) Numerical Computing and Interactive Software
- 18.338 Eigenvalues of Random Matrices
- 18.415(J) Advanced Algorithms
### Interdisciplinary Doctor of Philosophy in Statistics

#### 18.416[J] Randomized Algorithms

18.657 Topics in Statistics

### Data Analysis

**Select one of the following:** 12

- 6.555[J] Biomedical Signal and Image Processing
- 6.869 Advances in Computer Vision
- 18.367 Waves and Imaging
- IDS.131[J] Statistics, Computation and Applications

**Total Units** 24

#### 18.416[J] Randomized Algorithms

18.657 Topics in Statistics

### Data Analysis

**Select one of the following:** 12

- 6.555[J] Biomedical Signal and Image Processing
- 6.869 Advances in Computer Vision
- 14.386 New Econometric Methods and Advanced Research and Communication
- 14.387 Applied Econometrics and Advanced Research and Communication
- 18.367 Waves and Imaging
- IDS.131[J] Statistics, Computation and Applications

**Total Units** 24-27

#### Political Science

**Computation and Statistics**

**Select one of the following:** 12

- 6.867 Machine Learning
- 9.520[J] Statistical Learning Theory and Applications
- 14.381 Applied Econometrics

### Data Analysis

**Select one of the following:** 12

- 17.802 Quantitative Research Methods II: Causal Inference
- 17.804 Quantitative Research Methods III: Generalized Linear Models and Extensions
- 17.806 Quantitative Research Methods IV: Advanced Topics

**Total Units** 24

#### Social and Engineering Systems

**Computation and Statistics**

**Select one of the following:** 12

- 6.434[J] Statistics for Engineers and Scientists
- 6.438 Algorithms for Inference
- 6.867 Machine Learning
- 9.520[J] Statistical Learning Theory and Applications
- 14.381 Applied Econometrics
- 14.382 Econometrics
- 15.077[J] Statistical Learning and Data Mining
- 17.802 Quantitative Research Methods II: Causal Inference