INTERDISCIPLINARY DOCTOR OF PHILOSOPHY IN STATISTICS

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

Interdisciplinary PhD in 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.

or 18.675 Theory of Probability
IDS.190 Doctoral Seminar in Statistics and Data Science 3
Select one of the following: 1
18.6501 Fundamentals of Statistics 12
18.655 Mathematical Statistics

Total Units 27

1 Mathematics students may not elect 18.6501 (http://student.mit.edu/catalog/search.cgi?search=18.6501).

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

Total Units 24

Brain and Cognitive Sciences

Computation and Statistics
Select one of the following: 12
6.555[J] Biomedical Signal and Image Processing
6.867 Machine Learning
9.190 Computational Psycholinguistics
9.520[J] Statistical Learning Theory and Applications
9.660 Computational Cognitive Science

Data Analysis
Select one of the following: 12
9.272[J] Topics in Neural Signal Processing
9.583[J] Functional Magnetic Resonance Imaging: Data Acquisition and Analysis

Total Units 24

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

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] Parallel Computing and Scientific Machine Learning
18.338 Eigenvalues of Random Matrices
18.415[J] Advanced Algorithms
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
9.272[J] Topics in Neural Signal Processing
18.367 Waves and Imaging
IDS.131[J] Statistics, Computation and Applications

Total Units 24

Students may petition to use IDS.160 to fulfill the Computation and Statistics requirement, if not elected as part of the Common Core.

Mechanical Engineering
Computation and Statistics
2.168 Learning Machines 12
or 6.860[J] Statistical Learning Theory and Applications

Data Analysis
2.122 Stochastic Systems 12
or 2.29 Numerical Fluid Mechanics

Total Units 24

Physics
Computation and Statistics
Select one of the following: 12
6.438 Algorithms for Inference
6.862 Applied Machine Learning
6.864 Advanced Natural Language Processing
6.866 Machine Vision
6.867 Machine Learning
6.883 Advanced Topics in Artificial Intelligence
9.520[J] Statistical Learning Theory and Applications

16.940 Numerical Methods for Stochastic Modeling and Inference
18.337[J] Parallel Computing and Scientific Machine Learning

Data Analysis
Select one of the following: 12
6.869 Advances in Computer Vision
8.334 Statistical Mechanics II
8.371[J] Quantum Information Science
8.591[J] Systems Biology
8.592[J] Statistical Physics in Biology
8.942 Cosmology
9.583[J] Functional Magnetic Resonance Imaging: Data Acquisition and Analysis
16.456[J] Biomedical Signal and Image Processing
18.367 Waves and Imaging
IDS.131[J] Statistics, Computation and Applications

Total Units 24

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

Total Units 24
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<td>14.382</td>
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