STATISTICS (PH.D.)

https://nextcatalog.unh.edu/graduate/programs-study/mathematics-statistics/statistics-phd/

Description

The Ph.D. in statistics is a flexible program of coursework and research that meshes the faculty’s expertise with the students’ interests. Current faculty expertise are in Design of Experiments, Nonparametric Function Estimation, Model Selection, Time Series Analysis, Spatial Statistics, Bayesian Statistics, Data Mining and Large Data. Doctoral dissertations range from theoretical to applied. Interdisciplinary research is encouraged. Ph.D. students frequently work as research assistants in interdisciplinary studies, and also engage in statistical consulting.

Admission Requirement

Applicants must have completed significant undergraduate coursework in mathematics and Statistics, including basic Statistics (for example, design of experiments), the standard Calculus sequence, and Linear Algebra.

Applying

Please visit the Graduate School website for detailed instructions about applying to the doctoral program.

Requirements

Students are advanced to candidacy after meeting the following requirements:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MATH 836</td>
<td>Advanced Statistical Methods for Research</td>
<td>3</td>
</tr>
<tr>
<td>MATH 839</td>
<td>Applied Regression Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MATH 840</td>
<td>Design of Experiments I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 855</td>
<td>Probability with Applications</td>
<td>3</td>
</tr>
<tr>
<td>MATH 856</td>
<td>Principles of Statistical Inference</td>
<td>3</td>
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Advanced Coursework in Statistics

<table>
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<tr>
<th>Code</th>
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<tbody>
<tr>
<td>MATH 941</td>
<td>Bayesian and Computational Statistics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 945</td>
<td>Advanced Theory of Statistics I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 946</td>
<td>Advanced Theory of Statistics II</td>
<td>3</td>
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Select three courses from the following: 9

- MATH 837 Statistical Methods for Quality Improvement and Design
- MATH 838 Data Mining and Predictive Analytics
- MATH 841 Survival Analysis
- MATH 843 Time Series Analysis
- MATH 844 Design of Experiments II
- MATH 944 Spatial Statistics
- MATH 969 Topics in Probability and Statistics I
- MATH 979 Research Topics in Statistics

Minor Coursework

Select one of the following analysis courses: 3

- MATH 867 One-Dimensional Real Analysis
- MATH 953 Analysis I

Select two courses in a focused minor area, selected in consultation with the program advisor: 6

Total Credits 42

1 MATH #969 Topics in Probability and Statistics I and MATH 979 Research Topics in Statistics are topics courses and may be taken more than once.

Successful completion of written qualifying examinations in theory of statistics and in applied statistics.

Successful completion of a comprehensive exam in advanced theory of statistics and an elective comprehensive exam.

Participation in the one-credit statistics seminar during at least three semesters.

Successful completion of a dissertation proposal defense in the major field of statistics.

Dissertation

Doctor of Philosophy in Statistics: A dissertation that includes original research in statistics.