## Statistics

### STAT 578  **Topics in Statistics**  credit: 4 hours.

May be repeated if topics vary. Prerequisite: Consent of instructor.

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<thead>
<tr>
<th>CRN</th>
<th>Type</th>
<th>Section</th>
<th>Time</th>
<th>Days</th>
<th>Location</th>
<th>Instructor</th>
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<tbody>
<tr>
<td>36204</td>
<td>Lecture-Discussion</td>
<td>A1</td>
<td>11:00 AM - 12:20 PM</td>
<td>TR</td>
<td>106B8 - Engineering Hall</td>
<td>Qu, P</td>
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<tr>
<td>69104</td>
<td>Lecture-Discussion</td>
<td>C1</td>
<td>02:00 PM - 03:20 PM</td>
<td>TR</td>
<td>1022 - Lincoln Hall</td>
<td>Chatterjee, S</td>
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**Stat Learning in Data Science**
Restricted to Graduate - Urbana-Champaign.

For Statistics course registration information: go.illinois.edu/StatisticsRegistration

**TOPIC: Statistical Learning in Data Science**
Prerequisites: STAT 410 or STAT 510; and STAT 425. Description: Learn to analyze large complex data using advanced statistical learning methods and algorithms. Topics include data exploration and interpretation for structured and unstructured data; large data processing; optimization tools; recommender system; tensor methods; text mining; and imaging analysis. Software used includes R and Matlab. Students will gain practical skills of data mining and knowledge discovery in various applications such as business, political science, biology and medicine.

**Modern Stat Estimation Theory**
Restricted to Graduate - Urbana-Champaign.

For Statistics course registration information: go.illinois.edu/StatisticsRegistration

This course offers an introduction to the finite sample analysis of modern statistical estimation methods. Topics would include High Dimensional Linear Regression, Non Parametric Regression, Large Matrix Estimation and Principal Component Analysis (PCA), Shape/Norm Constrained Estimation and Minimax Lower Bounds (Decision Theoretic). The goal is to present various proof techniques for state-of-the-art methods in the above topics. Essential probability topics such as Concentration of Measure and Empirical Process Theory will be discussed concurrently. A handful of open problems are expected to be encountered and stated in the duration of the course.