## Statistics

**STAT 578  Topics in Statistics**  credit: 4 hours.
May be repeated if topics vary. Prerequisite: Consent of instructor.

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<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>243 - Mechanical Engineering Bldg</td>
<td>Qu, P</td>
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*Stat Learning in Data Science*
Restricted to Graduate - Urbana-Champaign.
For up-to-date information about statistics course registration, please see our registration update pages: 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.

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<tr>
<td>45000</td>
<td>Lecture-Discussion</td>
<td>B1</td>
<td>12:30 PM - 01:50 PM</td>
<td>TR</td>
<td>135 - Mechanical Engineering Bldg</td>
<td>Liang, F</td>
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*Bayes Machine Learning Methods*
Restricted to Graduate - Urbana-Champaign.
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**TOPIC:** Bayesian Methods for Machine Learning
Prerequisites: STAT 410 or STAT 510; STAT 428 or STAT 525; and STAT 542.
Description: The course aims to give a solid introduction to the theory, methods and computation of Bayesian inference, with a view toward applications in data mining and machine learning. Topics include Bayesian model selection and averaging, Bayesian networks and structure learning, Approximate Bayesian Computational methods, Bayesian nonparametrics, and Bayesian optimization.