Statistics

Statistics
Head of Department: Douglas G. Simpson
Department Office: 101 Illini Hall, 725 South Wright St., Champaign
Phone: 333-2167
www.stat.uiuc.edu

STAT 100  Statistics  credit: 3 hours.
First course in probability and statistics at a precalculus level; emphasizes basic concepts, including descriptive statistics, elementary probability, estimation, and hypothesis testing in both nonparametric and normal models. Credit is not given for both STAT 100 and any one of the following: ECON 202, PSYC 235, or SOC 485. Prerequisite: MATH 112.
Students who have completed a year of Calculus should enroll in STAT 200 instead of STAT 100.
This course satisfies the General Education Criteria for a:
Quantitative Reasoning I

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<th>Time</th>
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Quantitative Reasoning I course.
For up-to-date information about statistics course registration, please see our registration update pages: go.illinois.edu/StatisticsRegistration

30452  Lecture-Discussion  S1  10:00 AM - 11:50 AM  TWR  1065 - Lincoln Hall  Campos, M

Quantitative Reasoning I course.
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STAT 200  Statistical Analysis  credit: 3 hours.
Survey of statistical concepts, data analysis, designed and observational studies and statistical models. Statistical computing using a statistical package such as R or a spreadsheet. Topics to be covered include data summary and visualization, study design, elementary probability, categorical data, comparative experiments, multiple linear regression, analysis of variance, statistical inferences and model diagnostics. May be taken as a first statistics course for quantitatively oriented students, or as a second course to follow a basic concepts course. Credit is not given for both STAT 200 and STAT 212.
This course satisfies the General Education Criteria for a:
Quantitative Reasoning I

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Quantitative Reasoning I course.
For up-to-date information about statistics course registration, please see our registration update pages: go.illinois.edu/StatisticsRegistration Prerequisite STAT 100, AP credit, or equivalent statistics experience is assumed for this section.

STAT 385  Statistics Programming Methods  credit: 3 hours.
Statisticians must be savvy in programming methods useful to the wide variety of analysis that they will be expected to perform. This course provides the foundation for writing and packaging statistical algorithms through the creation of functions and object oriented programming. Fundamental programming techniques and considerations will be emphasized. Students will also create dynamic reports that encapsulate their implemented algorithms. Students must have access to a computer on which they can install software. Prerequisite: STAT 200 or STAT 212.

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STAT 390  Individual Study  credit: 1 OR 2 hours.
May be repeated to a maximum of 8 hours. Prerequisite: Consent of instructor.

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Departmental Approval Required
This CRN is a placeholder and cannot be registered. To register for STAT 390 Individual Study, please contact stat-reg@illinois.edu to request the CRN associated with the correct faculty member. Note that email approval from that faculty member may be required. For up-to-date information about statistics course registration, please see our registration update pages: go.illinois.edu/StatisticsRegistration

STAT 391  Honors Individual Study  credit: 1 OR 2 hours.
May be repeated to a maximum of 8 hours. Prerequisite: Consent of instructor.

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STAT 400  Statistics and Probability I  credit: 4 hours.
Introduction to mathematical statistics that develops probability as needed; includes the calculus of probability, random variables, expectation, distribution functions, central limit theorem, point estimation, confidence intervals, and hypothesis testing. Offers a basic one-term introduction to statistics and also prepares students for STAT 410. Same as MATH 463. 4 undergraduate hours. 4 graduate hours. Prerequisite: MATH 241 or equivalent.
Students must register for one discussion and one lecture section.

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STAT 410  Statistics and Probability II  credit: 3 OR 4 hours.
Continuation of STAT 400. Includes moment-generating functions, transformations of random variables, normal sampling theory, sufficiency, best estimators, maximum likelihood estimators, confidence intervals, most powerful tests, unbiased tests, and chi-square tests. Same as MATH 464. 3 undergraduate hours. 4 graduate hours. Credit is not given for both STAT 410 and STAT 409. Prerequisite: STAT 400; or STAT 100 and MATH 461.

STAT 420  Methods of Applied Statistics  credit: 3 OR 4 hours.
Systematic, calculus-based coverage of the more widely used methods of applied statistics, including simple and multiple regression, correlation, analysis of variance and covariance, multiple comparisons, goodness of fit tests, contingency tables, nonparametric procedures, and power of tests; emphasizes when and why various tests are appropriate and how they are used. Same as MATH 469. 3 undergraduate hours. 4 graduate hours. Prerequisite: STAT 408 or STAT 400; MATH 231 or equivalent; knowledge of basic matrix manipulations; or consent of instructor.
Restricted to Graduate - Urbana-Champaign. Restricted to MCS:Computer Sci Online -UIUC or NDEG:Computer Science Onl-UIUC. Restricted to online MCS-DS students. Center for Innovation in Teaching & Learning (CITL) restrictions and assessments apply, see https://online.illinois.edu. Additional ID Verification Coursera and ProctorU fees may apply. For more details on this course section, please see https://online.illinois.edu/online-courses/course-section?termcode=120185&crn=39301&ref=ocs. Non-Degree students may enroll on a space-available basis with consent of Program Coordinator. Please contact MCS-DS@cs.illinois.edu. Sections (and CRNs) for on-campus, degree-seeking students are: STAT 420 OLG (38705), MATH 469 OLG (38706), STAT 420 OLU (38707), and MATH 469 OLU (38708). For up-to-date information about statistics course registration, please see our registration update pages: go.illinois.edu/StatisticsRegistration

39303 | Online | DSX | ARRANGED | - | Unger, D
| Credit Hours: 3 hours
| Statistical Modeling in R
| Restricted to Undergrad - Urbana-Champaign.
| This section will remain at 0 capacity. Please see: STAT 420, section DSO, CRN 39301 for more information. For up-to-date information about statistics course registration, please see our registration update pages: go.illinois.edu/StatisticsRegistration

38705 | Online | OLG | ARRANGED | - | Unger, D
| Credit Hours: 4 hours
| Restricted to Graduate - Urbana-Champaign.
| For up-to-date information about statistics course registration, please see our registration update pages: go.illinois.edu/StatisticsRegistration

38707 | Online | OLU | ARRANGED | - | Unger, D
| Credit Hours: 3 hours
| Restricted to Undergrad - Urbana-Champaign.
| For up-to-date information about statistics course registration, please see our registration update pages: go.illinois.edu/StatisticsRegistration

STAT 440  Statistical Data Management  credit: 3 OR 4 hours.
The critical elements of data storage, data cleaning, and data extractions that ultimately lead to data analysis are presented. Includes basic theory and methods of databases, auditing and querying databases, as well as data management and data preparation using standard large-scale statistical software. Students will gain competency in the skills required in storing, cleaning, and managing data, all of which are required prior to data analysis. Same as CSE 440. 3 undergraduate hours. 4 graduate hours. Prerequisite: STAT 400 or STAT 409.

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| Credit Hours: 4 hours
| Restricted to Graduate - Urbana-Champaign.
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| Credit Hours: 3 hours
| Restricted to Undergrad - Urbana-Champaign.
STAT 448  **Advanced Data Analysis**  credit: 4 hours.
Several of the most widely used techniques of data analysis are discussed with an emphasis on statistical computing. Topics include linear regression, analysis of variance, generalized linear models, and analysis of categorical data. In addition, an introduction to data mining is provided considering classification, model building, decision trees, and cluster analysis. Same as CSE 448. 4 undergraduate hours. 4 graduate hours. Prerequisite: STAT 400 or STAT 409, and credit for or concurrent registration in STAT 410.

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Restricted to Graduate - Urbana-Champaign.
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Restricted to Undergrad - Urbana-Champaign.
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STAT 590  **Individual Study and Research**  credit: 0 TO 8 hours.
Directed reading and research. Approved for letter and S/U grading. May be repeated with approval. Prerequisite: Consent of instructor.

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Departmental Approval Required
This CRN is a placeholder and cannot be registered. To register for STAT 590 Thesis Research, please contact stat-reg@illinois.edu to request the CRN associated with the correct faculty member. Note that email approval from that faculty member may be required. For up-to-date information about statistics course registration, please see our registration update pages: go.illinois.edu/StatisticsRegistration

STAT 593  **STAT Internship**  credit: 0 TO 8 hours.
Supervised, off-campus experience in a field in which statistical science plays an important role. Approved for letter and S/U grading. Prerequisite: STAT 425 and consent of instructor.

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Credit Hours: 4 hours
Restricted to students in the Statistics department.
Restricted to Graduate - Urbana-Champaign.
For up-to-date information about statistics course registration, please see our registration update pages: go.illinois.edu/StatisticsRegistration
Registration for STAT 593 requires instructor approval. To seek instructor approval, see here: http://go.illinois.edu/stat593
Registration for STAT 593 without instructor approval will result in a failing grade. This section is for 4 CREDIT HOURS. Grading: Standard Letter.

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Restricted to students in the Statistics department.
Restricted to Graduate - Urbana-Champaign.
For up-to-date information about statistics course registration, please see our registration update pages: go.illinois.edu/StatisticsRegistration
Registration for STAT 593 requires instructor approval. To seek instructor approval, see here: http://go.illinois.edu/stat593
Registration for STAT 593 without instructor approval will result in a failing grade. This section is for ZERO CREDIT HOURS. Grading: Satisfactory/Unsatisfactory.

STAT 599 Thesis Research credit: 0 TO 16 hours.
Approved for S/U grading only. May be repeated. Prerequisite: Consent of instructor.

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