STATISTICS (STAT)

STAT 1100 - Introduction to Statistics
Credit(s): 3 Credits
Basic descriptive and inferential statistics. Emphasis on becoming a
smart consumer of statistics. Will include the study of examples
of statistics in the medical news. Credit not given for MATH-1300 or
MATH-1260 or DSCI-2070 and STAT-1100.

Restrictions:
Students in the Chaifetz School of Business college may not enroll.

STAT 1260 - Statistics Including Sports and Politics
Credit(s): 3 Credits
A SLU inquiry seminar. Producing data through the use of samples and
experiments; organizing data through graphs and numbers that describe
the distribution of the data of one variable or the relationship between
two variables; probability; statistical inference including confidence
intervals and tests of significance. 5 years of high school mathematics or
a grade of C- or better in MATH-1200.
Prerequisite(s): (MATH 1200 with a grade of C- or higher or Math Waiver
per Advisor with a minimum score of 1200)

STAT 1300 - Elementary Statistics with Computers
Credit(s): 3 Credits
Data production and analysis; probability basics, distributions, sampling,
estimation with confidence intervals, hypothesis testing, t-test,
correlation and regression; Cross tabulations and chi-square. Students
learn to use a statistical package such as SPSS. Credit not given for
STAT-1300 and any of the following: MATH-1300 or OPM-2070.
Prerequisite(s): (MATH 1200 or Math Waiver per Advisor with a minimum score of 1200)

STAT 1930 - Special Topics
Credit(s): 0-3 Credits

STAT 3850 - Foundation of Statistics
Credit(s): 3 Credits
Descriptive statistics, probability distributions, random variables,
equality, independence, hypothesis testing, confidence intervals,
regression and ANOVA. Applications and theory. Taught using statistical
software. Prerequisite: MATH-1520. Credit not given toward the math
major or minors for both MATH/STAT 3810 and MATH/STAT 3850.
Prerequisite(s): MATH 1520

STAT 3850 - Time Series
Credit(s): 3 Credits
Applied time series. Topics include exploratory data analysis, regression,
ARIMA. Spectral analysis, state-space models. Theory and applications,
taught using statistical software. Prerequisite: MATH/STAT 3850.
Prerequisite(s): (STAT 3850 or MATH 3850)

STAT 4850 - Mathematical Statistics
Credit(s): 3 Credits
Theory of estimators, sampling distributions, hypothesis testing,
confidence intervals, regression, bootstrapping, and resampling.
Theory and applications, taught using statistical software. Prerequisite:
MATH 4800. Students may not take both MATH 4850 and MATH 4820.
Prerequisite(s): MATH 4800

STAT 4860 - Statistical Models
Credit(s): 3 Credits
Poisson processes, Markov chains, hidden Markov models, continuous
time Markov chains, queuing theory. Theory and applications, taught with
statistical software. Prerequisite: MATH 4800.
Prerequisite(s): MATH 4800

STAT 4870 - Applied Regression
Credit(s): 3 Credits
Linear regression, model selection, nonparametric regression,
classification and graphical models. Theory and applications using
statistical software. Prerequisite: MATH/STAT 3850 and MATH 3110 or
MATH 3120.
Prerequisite(s): (MATH 3850 or STAT 3850); (MATH 3110 or MATH 3120)

STAT 4880 - Bayesian Statistics and Statistical Computing
Credit(s): 3 Credits
This course introduces Bayesian statistical methods and statistical
computing techniques using statistical computing software. Topics
include Bayesian models, Markov chain Monte Carlo, hierarchical
modeling, model comparison and regression models. Prerequisite:
STAT 3850.

STAT 4910 - Internship
Credit(s): 1-6 Credits (Repeatable for credit)

STAT 4930 - Special Topics
Credit(s): 3 Credits (Repeatable for credit)

STAT 4980 - Independent Study
Credit(s): 1 or 3 Credits (Repeatable for credit)

STAT 5080 - Time Series
Credit(s): 3 Credits
Regression, ARIMA models, spectral analysis, state-space models
and models in the frequency domain. Taught with statistical software.
Prerequisite: MATH/STAT 3850.
Prerequisite(s): (STAT 3850 or MATH 3850)

STAT 5085 - Mathematical Statistics
Credit(s): 3 Credits
Theory of estimators, sampling distributions, hypothesis testing and
confidence intervals, regression, bootstrapping, resampling, introduction
to Bayesian statistics and elementary experimental design. Prerequisite:
MATH 4800 or STAT 5080, Probability Theory.
Prerequisite(s): (MATH 4800 or STAT 5080)
STAT 5087 - Applied Regression
Credit(s): 3 Credits
Linear regression, model selection, nonparametric regression, classification and graphical models. Theory and applications using statistical software. Prerequisites: MATH/STAT 3850 and (MATH 3110 or MATH 3120).
Prerequisite(s): (MATH 3850 or STAT 3850); (MATH 3110 or MATH 3120)

STAT 5930 - Special Topics
Credit(s): 3 Credits (Repeatable for credit)

STAT 5980 - Independent Study
Credit(s): 1 or 3 Credits (Repeatable for credit)