STATISTICS (STAT)

STAT 590 - Experimental
A unique and specifically focused course within the general purview of a department which intends to offer it on a "one time only" basis and not as a permanent part of the department's curriculum.

Credits: 1-3
Term(s) Typically Offered: Offered as Needed
Enrollment limited to students with a semester level of Graduate.

STAT 595 - Workshop
A workshop is a program which is usually of short duration, narrow in scope, often non-traditional in content and format, and on a timely topic.

Credits: 1-6
Term(s) Typically Offered: Offered as Needed
Enrollment is limited to Graduate level students.

STAT 598 - Selected Topics
A Selected Topics course is a normal, departmental offering which is directly related to the discipline, but because of its specialized nature, may not be able to be offered on a yearly basis by the department.

Credits: 1-3
Term(s) Typically Offered: Offered as Needed
Enrollment is limited to Graduate level students.

STAT 603 - Statistical Methods
Statistical methods such as descriptive statistics, probability, Central Limit Theorem, probability distributions, statistical inference, hypothesis testing, Analysis of Variance (ANOVA), nonparametric methods and linear regression will be covered. These topics may be taught using health/public health/epidemiology examples as well as applications to business, engineering, and finance.

Credits: 3
Term(s) Typically Offered: Offered Fall Terms
Enrollment is limited to Graduate level students.

STAT 630 - Regression Methods
Regression methods including simple linear regression, multiple linear regression, logistic regression, survival analysis, repeated measures, principal component analysis, and inferential statistics applied to regression models.

Corequisite(s): STAT 603
Credits: 3
Term(s) Typically Offered: Offered Fall Terms
Enrollment is limited to Graduate level students.

STAT 656 - Statistical Computing
Computational data analysis is an essential part of modern statistics. Topics concerning computing and advanced statistics will be covered. Statistical analysis packages (such as SAS, R, and SPSS) will be discussed and compared. Background information and computational issues in various areas of statistics will be included.

Prerequisite: STAT 630[C]
[C] Requires minimum grade of C.
Credits: 3
Term(s) Typically Offered: Offered Winter Terms
Enrollment is limited to Graduate level students.

STAT 660 - Advanced Statistical Methods
Statistics is used in computer algorithms (machine learning) to enhance computer decision-making and prediction capabilities. this course will cover a wide variety of topics in statistical learning methods. Major statistical methods used in machine learning such as linear regression, survival analysis, and others will be discussed. Additional topics include unsupervised learning and supervised techniques such as principal component analysis, nearest neighbor, random forest, support vector machines, and neural networks. Simulation methods, such as the EM algorithm, Metropolis-Hasting algorithm, and the Markov Chain Monte Carlo method will also be discussed.

Prerequisites: STAT 630[C] and STAT 656[*C] (may be taken concurrently).
[C] Requires minimum grade of C.
Credits: 3
Term(s) Typically Offered: Offered Spring Terms
Enrollment is limited to Graduate level students.

STAT 668 - Decision Theory
An introduction to decision theory applied to complex and dynamic business, industry, and health care problems. Topics include multi-criteria decision theory, Bayesian decision theory, decision analysis under uncertainty and risk, simulation, utility theory, decision trees, analytic hierarchy process, marginal analysis, choice functions, forecasting models, and ethics and social responsibility in decision making. Applications to business, engineering, health care, supply chain management, quality control, inventory control, etc. Appropriate software tools for decision theory are used.

Credits: 3
Term(s) Typically Offered: Offered as Needed
Enrollment is limited to Graduate level students.

STAT 672 - Forecasting and Time Series
An introduction to creating, solving, analyzing, and interpreting real-world time-series and forecasting models. Topics include linear, autoregressive, moving average, and other forecasting and time-series techniques; transfer functions; multivariate model building; stationary and nonstationary techniques. Applications may include all areas where forecasting is required including transportation, finance, scheduling, networks, and supply chains. Appropriate software tools for analyzing forecasting models including software such as SAS and spreadsheet software will be taught.

Credits: 3
Term(s) Typically Offered: Offered Spring Terms
Enrollment is limited to Graduate level students.

STAT 690 - Experimental
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Credits: 1-3
Term(s) Typically Offered: Offered as Needed
Enrollment limited to students with a semester level of Graduate.

STAT 695 - Workshop
A workshop is a program which is usually of short duration, narrow in scope, often non-traditional in content and format, and on a timely topic.

Credits: 1-6
Term(s) Typically Offered: Offered as Needed
Enrollment is limited to Graduate level students.

STAT 698 - Selected Topics
A Selected Topics course is a normal, departmental offering which is directly related to the discipline, but because of its specialized nature, may not be able to be offered on a yearly basis by the department.

Credits: 1-3
Term(s) Typically Offered: Offered as Needed
Enrollment is limited to Graduate level students.

STAT 700 - Independent Study
Independent Study courses give students the opportunity to pursue research and/or studies that are not part of the university's traditional course offerings. Students work one on one or in small groups with faculty guidance and are typically required to submit a final paper or project as determined by the supervising professor.

Credits: 1-3
Term(s) Typically Offered: Offered as Needed
Enrollment is limited to Graduate level students.

STAT 790 - Experimental
A unique and specifically focused course within the general purview of a department which intends to offer it on a "one time only" basis and not as a permanent part of the department's curriculum.

Credits: 1-3
Term(s) Typically Offered: Offered as Needed
Enrollment limited to students with a semester level of Graduate.

STAT 795 - Workshop
A workshop is a program which is usually of short duration, narrow in scope, often non-traditional in content and format, and on a timely topic.

Credits: 1-6
Term(s) Typically Offered: Offered as Needed
Enrollment is limited to Graduate level students.

STAT 798 - Selected Topics
A Selected Topics course is a normal, departmental offering which is directly related to the discipline, but because of its specialized nature, may not be able to be offered on a yearly basis by the department.

Credits: 1-3
Term(s) Typically Offered: Offered as Needed
Enrollment is limited to Graduate level students.