

MATHEMATICS (MATH)

MATH 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.

MATH 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.

MATH 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.

MATH 611 - Optimization Models

An introduction to creating, analyzing, solving, and interpreting real-world optimization models. Topics include linear, discrete, and nonlinear optimization techniques; linear and integer programming; the simplex method; sensitivity; duality; graphical analysis; and branch-and-bound techniques. Applications include transportation problems, finance scheduling, networks, and supply chains. Appropriate software tools for analyzing optimization models including MATLAB and spreadsheet software will be used.

Credits: 3

Term(s) Typically Offered: Offered Fall Terms

Enrollment is limited to Graduate level students.

MATH 668 - Model Analysis

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 Spring Terms

Enrollment is limited to Graduate level students.

MATH 678 - Data Analytics Capstone I

This is the first of two capstone courses. In this course, the student will begin a large, real-life problem working with a company problem of their choice (e.g., retail, logistics, healthcare, risk-management, etc). This project must be approved by at least one faculty mentor and/or the course instructor. Through a series of lectures, the student will be exposed to the ethics and global laws pertaining to data collection, manipulation, and dissemination.

Prerequisite: STAT 672 (may be taken concurrently)^C

^C Requires minimum grade of C.

Credits: 3

Term(s) Typically Offered: Offered Winter Terms

Enrollment is limited to Graduate level students.

MATH 688 - Data Analytics Capstone II

This is a capstone course that requires students to complete a multi-dimensional data analytics project in their area of interest: health care analytics, business, engineering, etc. The project must be approved by MSDA faculty by no later than the end of the first week of the start of the course. Students will be invited to propose their own projects or create one in collaboration with MSDA faculty.

Credits: 3

Term(s) Typically Offered: Offered Summer Terms

Enrollment is limited to Graduate level students.

MATH 690 - 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.

MATH 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.

MATH 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.

MATH 700 - Data Analytics Independent Study

The independent study course provides an opportunity to conduct research or advanced studies in data analytics that is not covered in the current MSDA curriculum. Students work individually with a faculty member or in small groups. Specific content is determined by the instructor.

Credits: 1-3

Term(s) Typically Offered: Offered as Needed

Enrollment is limited to Graduate level students.

MATH 750 - Data Analytics Internship

An individually designed data analytics experiential learning opportunity within a cooperating enterprise. The experience provides an opportunity to integrate, apply and expand upon the skills acquired in data analytics coursework. Learning objectives, specific activities and an anticipated timeline must be approved by the professional supervisor and faculty supervisor prior to registering for the course.

Credits: 3-9

Term(s) Typically Offered: Offered as Needed

Enrollment is limited to Graduate level students.

MATH 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.

MATH 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.

MATH 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.