D S - Decision Science

Decision Science: D S

Lower-Division Courses

D S 119S, 219S, 319S, 419S, 519S, 619S, 719S, 819S, 919S. Topics in Decision Science.

This course is used to record credit the student earns while enrolled at another institution in a program administered by the University's Study Abroad Office. Credit is recorded as assigned by the study abroad advisor in the academic unit. University credit is awarded for work in an exchange program; it may be counted as coursework taken in residence. Transfer credit is awarded for work in an affiliated studies program. May be repeated for credit when the topics vary.

Upper-Division Courses

D S 129S, 229S, 329S, 429S, 529S, 629S, 729S, 829S, 929S. Topics in Decision Science.

This course is used to record credit the student earns while enrolled at another institution in a program administered by the University's Study Abroad Office. Credit is recorded as assigned by the study abroad advisor in the academic unit. University credit is awarded for work in an exchange program; it may be counted as coursework taken in residence. Transfer credit is awarded for work in an affiliated studies program. May be repeated for credit when the topics vary.

D S 235. Introduction to Decision Science.

Restricted to students in the McCombs School of Business. Examine modeling of business problems using methods from decision analysis, simulation and optimization. Two lecture hours a week for one semester. Decision Science 235 and 235H may not both be counted. Offered on the letter-grade basis only. Prerequisite: Statistics 301 or 301H; Mathematics 408Q or credit or registration for Mathematics 408D, 408L, or 408S.

D S 235H. Introduction to Decision Science: Honors.

Restricted to students in the McCombs School of Business Honors Program. Examine modeling of business problems using methods from decision analysis, simulation and optimization. Two lecture hours a week for one semester. Decision Science 235 and 235H may not both be counted. Offered on the letter-grade basis only. Prerequisite: Statistics 301, 301H, or Statistics and Data Science 321; Mathematics 408Q or credit or registration for Mathematics 408D, 408L, or 408S.

D S 372T. Topics in Decision Science.

Restricted to students in a business major. Three lecture hours a week for one semester. May be repeated for credit when the topics vary. Prerequisite: Varies with the topic.

> **Topic 11: Computational Finance.** Same as Statistics 372T (Topic 11). Introduction to the analysis and implementation of numerical methods used in finance. Explore numerical techniques in derivative pricing and optimal asset allocation, such as Monte Carlo and quasi-Monte Carlo simulation, methods for solving partial differential equations, and dynamic programming. Only one of the following may be counted: Decision Science 372 (Topic 7), 372T (Topic 11), Statistics 372 (Topic 7), 372T (Topic 11).
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> **Topic 16: Optimization Method in Finance.** Same as Business Analytics 372T (Topic 16), Finance 372T (Topic 16), and Statistics 372T (Topic 16). Explore quantitative methods and techniques in optimization and simulation, and their use in financial decision making. Discuss theory and application in portfolio selection, options and other derivative pricing, index tracking, risk measures, volatility estimating. Examine linear, quadratic, nonlinear, and integer programming; dynamic programming; robust optimization; Monte Carlo methods and variance reduction techniques. Emphasis will be placed on problem solving with advanced computational programming languages. Only one of the following may be counted: Business Analytics 372 (Topic 6), 372T (Topic 16), Decision Science 372 (Topic 6), 372T (Topic 16), Finance 372 (Topic: Optimization Method Finance), 372 (Topic 6), 372T (Topic 16), Statistics 372 (Topic 6), 372T (Topic 16).

Graduate Courses
Professional Courses