

Management Science (627)

500 Thesis (1-15)

Grading Restriction: P/NP only.
Repeatability: May be repeated.

502 Registration for Use of Facilities (1-15) Required for the student not otherwise registered during any semester when student uses university facilities and/or faculty time before degree is completed.

Grading Restriction: Satisfactory/No Credit grading only.

Repeatability: May be repeated.

Credit Restriction: May not be used toward degree requirements.

526 Advanced Applications of Systems Modeling and Simulation (3)

(See Industrial Engineering 526.)

531 Mathematical Programming (3) Linear programming solution procedures, duality, sensitivity, and parametric analysis, linear-fractional, piecewise-linear, separable and integer programming, transportation linear programs.

Recommended Background: Fundamentals of matrix algebra course.

532 Stochastic Models in Management Science (3)

Discrete-time Markov chains, Poisson processes, continuous-time Markov chains, renewal theory, and queueing theory.

(DE) Prerequisite(s): Statistics 563 and mathematical analysis course or consent of instructor.

533 Computational Mathematical Programming (3) Computational aspects of mathematical programming models, in particular for large systems.

(DE) Prerequisite(s): 531 and proficiency in computer language.

534 Management Science Methods in Business (3)

Application of methods from 531, 532, and 533 to real world problems in business/industry.

551 Leveraging Information Through Descriptive and Prescriptive Modeling (3)

Concepts and tools for emulating business operations (descriptive modeling) and for determining optimal operational or tactical strategies (prescriptive modeling). Visualization, optimization, and simulation

concepts reinforced through hands-on experience with technologies: geographic information systems (GIS), spreadsheet-based models, simulation packages, and supply chain optimization software.

593 Management Science Problems (1-6)

Directed study on subject of mutual interest.

Repeatability: May be repeated. Maximum 9 hours.

600 Doctoral Research and Dissertation (3-15)

Grading Restriction: P/NP only.

Repeatability: May be repeated.

631 Integer Programming (3) Theoretical and computational aspects of linear programming with integer variables, branch and bound, cutting plane, and group theoretic algorithms.

(DE) Prerequisite(s): 531 or equivalent.

651 Nonlinear Optimization (3) Kuhn-Tucker theory in nonlinear programming, solution procedures for constrained and unconstrained nonlinear programs, search techniques, quadratic programming, duality and sensitivity analysis. *(Same as Industrial Engineering 602.)*

(DE) Prerequisite(s): 531 or equivalent and proficiency in computer language.

681 Special Topics (3)

Repeatability: May be repeated. Maximum 9 hours.

(DE) Prerequisite(s): 531 and 532.

Registration Permission: Consent of instructor.

691 Management Science Seminar (1)

Subjects selected from current literature.

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