332. Modern Drama
Fall, 4(4-0) 132 or 131 with 3.0 or better.
Recent plays which have social and literary significance. Students may submit original dramatic writings as partial fulfillment of course writing requirements.

333. Modern Poetry
Spring, 4(4-0) 132 or 131 with 3.0 or better.
Recent poetry of literary and social nature. Students may submit original poetry in partial fulfillment of course writing requirements.

344. Introductory Animal Systematics Laboratory
Fall, 10-0 201, 503 concurrently.
Interdepartmental with the Department of Zoology. Laboratory examination of form and function of representative vertebrate and invertebrate animals.

361. Philosophy of Technology
Fall, Winter, 4(4-0) Sophomores or approval of college. Interdepartmental with the Department of Philosophy.
Is our technology desirable? Are its social forms desirable? What alternatives are there?

362. Philosophy of Biological Sciences
Winter, Spring, 4(4-0) Nine credits in science or approval of department. Interdepartmental with the Department of Philosophy.
Methodological notions and problems of the biological sciences such as observation and measurement, classification, teleological and functional explanation, teleological systems, emergentism, vitalism, value neutrality.

390. Directed Study
Fall, Winter, Spring, Summer. 1 to 6 credits. May re-enroll for a maximum of 6 credits. Juniors and approval of college.
Faculty directed studies in curricular areas which are normally related to regular course offerings.

391. Senior Seminar I
Fall, Winter, Spring, 3(3-0) Seniors or approval of college.
Selected interdisciplinary problems concerned with the interface between science and society or science and man are identified and formulated. A bibliography is generated and an outline for a thesis prepared.

392. Senior Seminar II
Fall, Winter, Spring, 3(3-0) 491.
The thesis planned in 491 is written and evaluated.

495. Independent Study
Fall, Winter, Spring, Summer. 1 to 12 credits. May re-enroll for a maximum of 12 credits. Juniors and approval of college.
Student conceived individual course of study in curricular areas. Preliminary faculty approval and continuing guidance.

496. Independent Study
Fall, Winter, Spring, Summer. 1 to 12 credits. May re-enroll for a maximum of 12 credits. Juniors and approval of college.
Student conceived individual course of study in curricular areas. Preliminary faculty approval and continuing guidance.

497. Independent Study
Fall, Winter, Spring, Summer. 1 to 12 credits. May re-enroll for a maximum of 12 credits. Juniors and approval of college.
Student conceived individual course of study in curricular areas. Preliminary faculty approval and continuing guidance.

498. Independent Study
Fall, Winter, Spring, Summer. 1 to 12 credits. May re-enroll for a maximum of 12 credits. Juniors and approval of college.
Student conceived individual course of study in curricular areas. Preliminary faculty approval and continuing guidance.

499. Independent Study
Fall, Winter, Spring, Summer. 1 to 12 credits. May re-enroll for a maximum of 12 credits. Juniors and approval of college.
Student conceived individual course of study in curricular areas. Preliminary faculty approval and continuing guidance.

500. Operations Planning
Fall, Spring. 4(4-0) CPS 110, ST 315, AFA 202.
Operations Management—functions and technologies. Planning and acquiring physical facilities, work design and management, acquisition and management of materials.

501. Operations Control
Winter. 4(4-0) 309.
Analysis and control of operations. Production control, product reliability, maintenance, cost control and management information systems.

502. Organization and Administration
Fall, Winter, Spring, Summer. 4(4-0) Junior Business majors; EC 201 and AFA 201.
Analysis of the internal organization structure and of some external influences on business and other goal-directed institutions. Examines administrative and managerial concepts in the context of behavioral research in business. Cases and outside research reports are used for specific analyses.

503. Materials and Purchasing Management
Fall, Winter. 4(4-0) 302 or MTA 300 or Juniors; non-majors.
Planning, organizing and controlling materials; acquisition in industrial enterprises, institutions, and government. Management of purchasing, materials movement, storage and control. Value analysis, purchasing research, vendor relations and purchase forecasting.

504. Analysis of Processes and Systems
Fall, Winter. 4(4-0) CPS 110, ST 316.
Analysis of some fundamental systems and process concepts which are basic to industrial management. The course is oriented toward computer model building, acquainting the student with the use of the computer as an instrument for analysis of complex problems in industry. Course includes consideration of criteria for efficiency and optimization, and program planning.

505. Fundamentals of Personnel Administration
Fall, Winter, Spring, Summer. 4(4-0) Juniors.
Organization, functions, and policy administration of employee relations activities in the business enterprise; consideration of new techniques of employment, training, wage payment, morale-building, and employee security.

506. Purchasing and Materials Research
Winter. 4(4-0) Juniors.
Applied research focusing on the purchasing and materials management functions in organizations. Administration and operation of the research effort. Field research studies.

507. Operations Management: Current Topics
Spring. 4(4-0) 301, 302.
Consideration of current and controversial questions in the operations area. Field experience to study operations and policies in industrial, institutional, and service organizations.

400. Introduction to Management Science
Winter. 4(4-0) 306.
Quantitative models and techniques applied to various business problems integrating the computer into problem solving. Topics include linear programming, integer programming, dynamic programming, queuing problems, Bayesian Decision Theory, theory of games.
409. Business Policy
Fall, Winter, Spring, Summer. 4(4-0)
Seniors in business administration and 392; AFA 391; MTA 300.
Problems, methods, and analytical frameworks for building and maintaining consistent and effective policy frameworks in the business enterprise. Written and oral analyses are made of comprehensive cases: cutting across the major functions within business organizations. Team and individual reports are required.

411. Personnel Selection and Development
Winter. 4(4-0) 310; MTA 317.
Manpower input problems of businesses organizations—manpower planning, recruitment, selection, placement, training and development at all levels. Focus is on policy issues, research findings, and advanced techniques.

412. Compensation and Motivation
Spring. 4(4-0) 310.
Manpower motivation and compensation problems in business organizations—performance appraisal, job evaluation, wage and salary administration, non-financial incentives and the impact of job content and job context factors on performance.

413. Occupational Safety and Health Administration
Fall, Winter, Spring. 4(4-0) 302 for majors.
Programs and procedures for control of work accidents and maintenance of health in business and other organizations. Analysis of cost related to employee and product safety. Administration of a safety program in compliance with new Federal law.

414. Human Relations in Business
Fall, Winter, Summer. 4(4-0) 302; approval of department. Student may not receive credit in both MGT 414 and PSY 358.
Human problems in business administration: examination of the empirical research dealing with organizational and administrative problems in business, including morale, motivation, authority, power, centralization, commitment, and mobility.

415. Managerial Approaches to Collective Bargaining
Winter, Spring. 4(4-0) 302 or Junior non-business majors.
Union-management problems and managerial strategy and tactics in collective bargaining—the written, oral, verbal, legal constraints, negotiations and operating under the contract, dimensions of cooperation and conflict.

417. Minorities and Women in the World of Work
Fall, Spring. 4(4-0) Senior majors or approval of department. Interdepartmental with the Department of Racial and Ethnic Studies and the School of Social Work.
Racial, ethnic, sexual and other minority experiences and problems in the world of work. Awareness training approach (what it's like to be . . .) featuring movies, guests, sub-group discussions and encounter-type exercises.

469. Field Studies
Fall, Winter, Spring, Summer. Variable credit. May re-enroll for a maximum of 8 credits. Business administration majors and approval of department.
Planned program of observation, study, and work in selected business firms. Designed to supplement classroom study in such a way as to make maximum contribution to students' total educational experience. Field work may be engaged in finance, insurance, marketing, personnel management, production management, purchasing, real estate, retailing, transportation and banking.

499. Senior Seminar
Spring. 4(4-0) Senior majors; approval of department.
Directed reading and student research in contemporary management problems.

801. Work Design and Administration
Fall. 4(4-0)
Design, improvement, and problems in the administration of work systems with emphasis on repetitive operations. Criteria for evaluating systems; tools for developing, analyzing, and improving procedures. Cases and projects.

802. Materials Management
Spring. 4(4-0)
Advanced study of the policies and practices relating to the procurement and control of materials in business organizations.

803. Seminar in Industrial Relations
For course description, see Interdisciplinary Courses.

804. Organization and Administration
Fall, Winter, Spring. 4(4-0) Approval of department.
Dynamics of organization: the organization seen as an open system interacting with a rapidly changing environment, as a structure of organized human cooperation, as an instrument of managerial strategy; current theory and research applied to organizational process and design.

807. Administrative Policy
Fall, Winter, Spring, Summer. 4(4-0) 833, MTA 804; AFA 855; plus 30 credits in the MBA core program.
Application of administrative theory and techniques to business situations through cases and cutting across major functions within business organization. Cases viewed from standpoint of general management with consideration of social and physical environmental forces surrounding the firm.

808. Seminar in Management
Fall, Winter, Spring. 4(4-0) May re-enroll for a maximum of 12 credits. Philosophy, practice, research, and current problems in management, organization, and administration. Historical and current literature, lectures, discussion, individual research, cases and plant visits are methods of study used in various terms.

809. History of Management Thought
Fall. Development of management concepts as evidenced in the writings of major contributors. Environment factors and relation of early ideas to current thought.

810. Personnel Management
Fall, Winter, Summer. 4(4-0) 806.
Principles and methods of recruiting, selecting, training, evaluating, motivating, and rewarding personnel. Fringe benefits, retirement, absenteeism, and other employee benefit problems.

811. Advanced Problems in Personnel Management
Fall, Spring, Summer. 4(4-0) May re-enroll for a maximum of 8 credits. 810. Advanced studies in selected administrative and technical policies and practices in employee relations, with individual and group project work and research.

813. Human Relations in Management
Fall, Spring. 4(4-0) Approval of department.
The executive role: Theories and techniques of leadership, communication, conflict management, morale, motivation, authority, power, examined by means of cases, role playing, laboratory exercises, and study of behavioral science research findings.

814. Occupational Safety and Health Management
Spring. 4(4-0) Graduate students or approval of department.
Objectives and procedures for managerial control of work injuries and illness in business and other organizations. Complying with federal and state law, correcting hazards, analyzing costs, modifying behavior. Product safety.

818. Supervisory and Executive Development
Fall, Spring, Summer. 4(4-0) 806 or 808.
Theory and research of developmental stages of executive careers. Special emphasis on: impact of organization on executive potentiality; forces influencing development of executive skills and abilities; studies of developmental role performance; role of training programs.

821. Production Control
Winter. 4(4-0) 801.
Planning and control of production operations. Inventory management, production and work force smoothing, job shop scheduling and project scheduling.

831. Computers and Systems Analysis for Business
Fall, Spring. 4(4-0) 832 or concurrently MTH 111 and MTH 215 or concurrently or 18 credits of college mathematics. Open only to selected MBA candidates.
Computer programming and systems analysis in business administration.

832. Statistical Methods for Business
Fall, Spring. 4(4-0) 831 or concurrently MTH 111 and MTH 315 or concurrently or 12 credits of college mathematics. Open only to selected MBA candidates.
Statistics for analysis and research in business.

833. Decision Making Models
Fall, Winter, Spring. 4(4-0) 831, 832; AFA 840 or concurrently.
Normative decision analysis in business under different assumptions of information availability.

834. Linear Optimization Models
Fall, Spring. 4(4-0) 833, MTH 238, MTH 342.
Nonlinear Optimization Models
Winter. 4(4-0) Students may not receive credit for both MGT 935 and SYS 829, 834.

Applied Stochastic Processes for Business
Spring. 4(4-0) 835.
The structure and analysis of stochastic models common to business and economics. Topics may include the Poisson process, renewal-reward processes, discrete Markov processes, with examples from queuing, reliability, maintenance and inventory.

Corporation Management and Society
Spring. 4(4-0) 806.
Analysis of the emerging character of administrative structure of the large corporation. Administrative autocracy, corporate government, stockholder and director relationships. Examination of ethics of decision-making, strategic values and priorities basic to resource allocation decisions.

Organization and Control in the Political Economy: Institutions and Theory
Winter. 4(4-0) Interdepartmental with and administered by the Economics Department. Organization and technique in choice and implementation of economic, especially planning and programming, functions of political authority.

Organization and Control in the Political Economy: Selected Problems
Spring. 4(4-0) Approval of instructor. Interdepartmental with and administered by the Department of Economics. Analysis of role and tasks, appropriate techniques and organizational structures of political agencies in planning and management of complex programs.

Special Problems
Fall, Winter, Spring, Summer. Variable credit. Approval of department.

Behavioral Research: Organization
Winter. 3 credits. MTA 905.
Concepts and methods of behavioral science research that are applicable to the study of organization as a strategic device in the development of tangible and intangible values and in the control of elements of business enterprise.

Behavioral Research: Business Executive
Spring. 3(4-0)
Concepts and methods of behavioral science research in the study of the agents of enterprise decision-making and action. Attention is focused on the way in which decisions are made in business organizations and the multiple influences operating on the executive. Modes of adjustment to the decision environment are examined.

Seminar in Organization Theory
Winter. 4(4-0) 806; doctoral candidates; master's candidates with approval of department.
Directed reading and research on issues in contemporary organization theory.

Seminar in Personnel Research
Spring. 4(4-0) 810; doctoral candidates; master's candidates with approval of department.
Directed reading and research on issues in contemporary personnel administration theory and practice.

Systems Simulation
Fall. 4(4-0) 556, STP 425, MTH 334, 346, 356, 566. Interdepartmental with the Statistics and Probability Department.
The concept of a model, model building, characteristics of simulation models. Techniques of computer simulation. Simulation models in research, and management planning/control. Validation and experimental design. Special purpose languages.

Mathematical Programming For Business
Spring. 4(4-0) 836, MTH 334, 426, STP 856. Interdepartmental with the Statistics and Probability Department.

Advanced Applied Stochastic Processes
Winter. 4(4-0) 835, 893. Interdepartmental with the Statistics and Probability Department.
Selected topics from the following areas: Semi-Markov, Markov-renewal and regenerative processes; Markov and semi-Markov decision processes; decision theory, applications from production, inventory, reliability, queuing, and gaming theory.

Research
Fall, Winter, Spring, Summer. Variable credit. Approval of department.

MARKETING AND TRANSPORTATION ADMINISTRATION MTA
College of Business

Selected Topics
Fall, Winter, Spring. 3(3-0) or 4(4-0)
May re-enroll for a maximum of 6 credits when a different topic is taken.

Marketing Management in Business and Society I
Fall, Winter, Spring. 4(4-0)
EC 300.
Firm and consumer roles in the exchange system for goods and services. Comparative analysis of market structures and marketing management. Fitting product-service offerings to various customer groups needs.

Marketing Management in Business and Society II
Fall, Winter, Spring. 4(4-0)
300.
Development of distribution, communication and pricing policies. Integration of product, distribution, communication and price policies into a marketing plan. Emphasis on financial aspects of marketing and impact on society.

Personal Selling
Fall, Winter, Spring, Summer. 3(3-0)
Theories, principles, methods and techniques of personal selling with application to different buyer-seller situations. Development of interpersonal communication skills. Career opportunities in selling.

Sales Management
Fall, Winter, Spring. 4(4-0) 300.
Organization and administration of the firm's personal selling. Topics include: recruitment, selection, training, compensation, evaluation, development, and motivation of salesmen; market assessment, territory allocation, and quotas; segment analysis and budgeting.

Fundamentals of Statistical Inference
Fall, Winter, Spring. 4(5-0) STT 315. Primarily for students in the College of Business. Interdepartmental with and administered by the Statistics and Probability Department.
Description of sample data, applications of probability theory, sampling, estimation, tests of hypotheses.

Quantitative Business Research Methods
Fall, Winter, Spring. 4(3-2) 316.
Interdepartmental with the Statistics and Probability Department.
Application of statistical techniques to business decision-making. Topics covered include applications of linear regression and correlation, analysis of variance, selected non-parametric tests, time series, and index numbers.

Consumer and Buyer Behavior
420. Fall, Spring, Summer. 4(4-0) 310.
Consumer buyer behavioral characteristics, theories and research methods for marketing and strategies and problem solving. Emphasis on predicting and understanding purchase behavior for best firm/buyer needs match.

Food Processing and Distribution Management
Winter. 3(3-0) 300 or FSM 200. Interdepartmental with Food Systems Economics and Management. Analysis of problems faced in the food processing and distribution system. Includes functional interrelationships, consumer orientation and future development.

Transportation Plans and Policies
Fall, Spring, Summer. 4(4-0) Juniors.
Policy formulation in logistics, transportation and distribution (LTD) systems. Examination of historical forces and trends, major contemporary demand and supply influences, development of a functional framework, survey of major emerging policies.

Retail Management
Fall, Winter, Spring. 4(4-0) 300, AFA 201 or concurrently.
Management methods, locational analysis, store organization, personnel planning, merchandising, buying and pricing techniques and customer service policies for retail firms. Survey of retailing and its role in distribution.

Honors Work
Summer. 1 to 5 credits. Approval of department.
Investigates models, concepts and research findings of particular significance to effective decision-making in administration of marketing and transportation systems.