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

881. Organization and Control in the Political Economy: Selected Problems  
Winter of odd-numbered years. 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.

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

906. Behavioral Research: Organization  
Winter. 3 credits, MTA 905.  
Interdepartmental with and administered by the Department of Economics.  
Concepts and methods of behavioral science research that are applicable to the study of organizations as a strategic device in the development of tangible and intangible values and in the control of elements of business enterprise.

907. Behavioral Research: Business Executive  
Fall. 3(3-0)  
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.

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

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

937. Systems Simulation  
Fall. 4(4-0) MGT 836, STT 433, MTH 228. Interdepartmental with the Department of Statistics and Probability.  
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.

948. Mathematical Programming For Business  
Spring. 4(4-0) MGT 836, MTH 334, MTH 438, STT 853. Interdepartmental with the Department of Statistics and Probability.  

949. Advanced Applied Stochastic Processes  
Winter. 4(4-0) MGT 836, MTH 337. Interdepartmental with the Department of Statistics and Probability.  
Selected topics from the following areas: Semi-Markov, Markov-renewal and regenerative process models; Markov and semi-Markov decision processes, decision theory, applications from production, inventory, reliability, queuing, and gaming theory.

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

313. Sales Management  
Fall, Winter, Spring, Summer. 4(4-0) MTA 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 alignment, and quotas; segmental analysis and budgeting.

316. 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 Department of Statistics and Probability.  
Description of sample data, applications of probability theory, sampling, estimation, tests of hypotheses.

320. Consumer and Buyer Behavior  
(420.) Fall, Summer. 4(4-0) MTA 300.  
Consumer buyer behavior 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.

335. Food Processing and Distribution Management  
Winter. 3(3-0) MTA 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.

341. Transportation Plans and Policies  
Fall, Spring, Summer. 4(4-0) MTA 300.  
Policy formulation in logistics, transportation and distribution system. Examination of historical forces and trends, major contemporary demand and supply influences, development of a functional framework, survey of major emerging policies.

351. Retail Management  
Fall, Winter, Spring. 4(4-0) MTA 300, AFA 201 or concurrently. Interdepartmental with the Department of Economics.  
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.

400H. Honors Work  
Fall, Winter, Spring. 1 to 15 credits. Approval of department.  
Investigates models, concepts and research findings of particular significance to effective decision making in administration of marketing and transportation systems.
Courses

409. Field Studies in Business Fall, Winter, Spring, Summer. Variable credit. May reenroll for a maximum of 8 credits. Majors and approval of department. Planned program of independent research or observation, study, and work in selected business firms. Designed to supplement classroom study in such a way as to make maximum contribution to student's total educational experience.

414. Marketing Research Fall, Winter, Spring, Summer. 3,5(5-0) MTA 301, MTA 317. Research process as an aid to decision making in marketing. Study of major methods, modes, and strategies of international trade and operations. Applications through reports and case decisions.

415. International Market Systems Fall, Winter. 4(4-0) MTA 300. Development of criteria for evaluating foreign markets. Design of international organization and marketing systems. Study of major methods, modes, and strategies of international trade and operations. Applications through reports and case decisions.

418. Marketing Development and Policies Fall, Winter, Spring, Summer. 4(4-0) MTA 301. MTA 414 and at least 3 additional credits of MTA electives. Study and integration of major tasks and decisions involved in developing and marketing products. Comprehensive discussion of cases involving different decisions for a variety of products.

439. Advanced Food Processing and Distribution Management Fall, Winter, Spring. 3,5(3-0) MTA 335. Interdepartmental with Food Systems Economics and Management. Managerial principles and techniques applied to food processing and distribution. Emphasizes adjustment to changing social, economic and internal company environment. Student interaction with industry, labor and government representatives. Field trips, special projects.

445. Management of Logistics Transportation and Distribution Systems Fall, Winter, Spring. 4(4-0) MTA 300. Micro analysis of private and public enterprise movement systems. Component parts of the movement system, analytical tools used in system planning, implementation and control.

448. Passenger Transportation Systems Winter. 4(4-0) MTA 300 or HRV 375. Composition and objectives of principal passenger travel markets. Analysis of carrier services, pricing and promotional practices and problems, competitive and cooperative relations. Review of major proposals for change and expansion of service systems.

452. Retail Policies and Problems Spring. 4(4-0) MTA 351. Analysis of retail problems with examination of selected current major problem areas. Critical review of budgetary and other controls, standards and techniques used to achieve management objectives.

802. Research Analysis for Marketing Decisions Fall, Spring. 4(4-0) Use of research techniques as an aid in marketing decision making. Research process involving research problem definition, hypothesis formulation, data collection, interpretation and presentation. Class projects may be used.

804. Marketing Concepts and Processes Fall, Winter. 4(4-0) The business is considered relative to its external environment. Institutions comprising the marketing system, the principal environmental opportunities and constraints facing the marketing manager, and the major marketing informational, control and coordination devices available to the firm will be studied.

805. Marketing: Models, Theories and Strategies Fall, Winter, Spring, Summer. 4(4-0) MTA 804. Analysis of marketing functions, programming marketing effort, and control and coordination are considered within the context of industrial and consumer demand. Strategic and decision-making aspects of marketing are stressed.

807. Foundations of Industry Fall, Summer. 3(3-0) Functional appraisal of materials foundation of business enterprise, emphasizing allocation, support capacity and essential characteristics of present and future of industrial resources as they effect business decisions, opportunities and responsibilities.

808. Emerging Issues in the Business Environment Winter, Summer. 4(4-0) May reenroll for a maximum of 12 credits if course content changes. Thirty credits of MBA core program, or approval of department. Selected significant current organization, social, political, economic and cultural issues are examined in relation to business policy and decision making. Discussions, readings and research reports. Topics selected may vary from term to term.

809. Planning Logistics, Transportation, and Distribution Systems Fall, Winter. 4(4-0) Planning and control of the enterprise logistics system and physical distribution operations. Systems approach will emphasize plans appropriate to objectives of the enterprise-private, public, or carrier.

810. National Transportation Policy and Plans Fall, Winter. 4(4-0) An operational model and theoretical perspective of national policies that are apt to shape the future of the transportation system. Interaction of government, carrier, and user logistics and distribution strategies.

811. Seminar in Marketing Fall, Winter, Spring, Summer. Variable credit. May reenroll for a maximum of 15 credits.

812. Problems in Logistics, Transportation, and Distribution Systems Winter, Spring. 4(4-0) MTA 810. Design, application, and measurement of the cost and service performance of a specific enterprise's logistics system. Includes examination of applicable research concepts, planning models, and control techniques.

823. Seminar in Retailing Winter. 4(4-0) Critical analysis of available generalizations concerning the economic, social, and commercial role of retailing. Special attention to concepts of retail competition and productivity. Emphasis on research in improving retail efficiency.

824. Marketing Channel Management Spring. 4(4-0) MTA 805. Seminar in selected organizational, social, political, economic and cultural issues related to management in marketing channels.

831. Advanced Food Processing and Distribution Management Fall, Spring. 4(4-0) May reenroll for a maximum of 9 credits. Approval of department. Interdepartmental with the Department of Agricultural Economics. Food industry adjustment to changing social, economic and internal company environment. Managerial principles and techniques applied to food processing and distribution. Student interaction with industry, labor and government representatives.

841. Management of Logistics, Transportation, and Distribution Systems Spring, Summer. 4(4-0) MTA 810. A case course on management problems encountered in logistics, transportation, and distribution systems. Merits considered for alternative solutions and implementation strategies in the decision-making process.

851. Market Behavior and Competitive Strategy Fall, Winter, Summer. 4(4-0) MTA 805. Industrial and consumer market structure and behavior and their impact upon the firm's competitive operations and actions.

853. Market Programming Winter, Spring, Summer. 4(4-0) MTA 805. Planning processes leading to programming the various elements of market cultivation. Major emphasis is given to the development of a total marketing strategy for the firm. Case analysis.

854. Problem-Solving Processes in Marketing Fall, Spring. 4(4-0) MTA 853. The problem-solving process is approached through the investigation and solution of current marketing problems by research teams.

855. Market Cost-Revenue Analysis Winter. 4(4-0) One course in accounting and one on marketing. Interdepartmental with the Department of Accounting and Financial Administration. Analytical tools for use in planning and controlling marketing activities. Emphasis on the determination of factors causing marketing cost differences and the assessment of these factors. Application of tools to determination of expenditure-revenue patterns and market potentials.
860. **International Business**  
Winter, Summer, 4(4-0)  
The economic environment within which the international firm operates is presented. Special emphasis on relating trade and payments theory, regional analysis, and economic development to strategy formulation of the firm. Marketing, financial, and organizational factors are considered.

862. **International Marketing**  
Spring, 4(4-0) MTA 805  
Models for headquarters planning and control of international marketing operations are developed. Social, cultural, institutional, and economic variables in studying marketing operations in foreign environments.

863. **Problems in International Business**  
Fall, 4(4-0) MTA 960 or MTA 962 or approval of department  
Examination of strategies and organization for international business. In-depth consideration of headquarters and overseas personnel, marketing, financial, and legal issues.

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

905. **Analysis of Business Enterprise Systems**  
Fall. 3 credits. MTA 805; MGT 896  
Research concepts and scientific methods for the study of business enterprise systems. The design of research, formulation of hypotheses, concepts of measurements and use of quantitative methods in the study of business systems.

909. **Theory of Transportation-Distribution Systems**  
Fall. 4(4-0)  
Examines the functions of transportation-distribution systems. Develops the relevant elements of networks, systems, and economic theory with empirical design. Applications to the design evaluation, and control of representative macro and micro systems.

910A. **Advanced Research in Marketing I**  
Winter, 4(4-0) Second-year doctoral students in marketing  
Advanced concepts and quantitative methods in the scientific investigation of marketing phenomena and the tools of market cultivation.

910B. **Advanced Research in Marketing II**  
Spring, 5(5-0) MTA 910A  
Continuation of MTA 910A.

911A. **History of Market Thought**  
Fall, 4(4-0) May reenroll for a maximum of 15 credits. MTA 851  
Traces the evolution of marketing institutions, techniques, theories and criticism. The influence of changing environmental and technological factors on marketing practice and thought. Readings in retrospective and original materials, discussion and research paper.

911B. **Seminar in Macro Marketing**  
Winter. 4(4-0) May reenroll for a maximum of 15 credits. MTA 911A  
Examines the relationships between competition, marketing and corporate and economic growth. Emphasis is given to a functional examination of competition and the central role of innovation in the process.

912. **Research Methodology in Transportation-Distribution Systems**  
Winter. 4(4-0) MTA 812, MTA 909  
Research methodology in the design and administrative design of transportation-distribution systems. Emphasis on technique and methodology for conducting system design studies and evaluation of common implementational problems.

941. **Transportation-Distribution Development Policy**  
Spring. 4(4-0) MTA 909, MTA 912  
Applications in theory, principles, and processes developed in MTA 909 and MTA 912 in the design of research processes and reports in significant transport and distribution problems.

957. **Seminar in Micro Marketing**  
Fall, 4(4-0) MTA 911A  
Examines the current state of theory concerning the planning and implementation of marketing strategies and programs, and tries to identify where future research is needed and/or will be most useful to marketing and business managers.

999. **Doctoral Dissertation Research**  
Fall, Winter, Spring, Summer. Variable credit. Approval of department.

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**MATHEMATICS**  

**MTH**

**Mathematics Descriptions of Courses**

**Mathematics**

801. **Elements of Algebra**  
Fall, Winter, Spring, Summer. 2(2-0)  
Current enrollment in MTH 981.

890. **Advanced Mathematics**  
Fall, Winter, Spring. 3(3-0)  
Current enrollment in MTH 982, one year of high school algebra, satisfactory score on placement exam.

909. **Theory of Transportation-Distribution Systems**  
Fall. 4(4-0)  
Examines the functions of transportation-distribution systems. Develops the relevant elements of networks, systems, and economic theory with empirical design. Applications to the design evaluation, and control of representative macro and micro systems.

910A. **Advanced Research in Marketing I**  
Winter, 4(4-0) Second-year doctoral students in marketing  
Advanced concepts and quantitative methods in the scientific investigation of marketing phenomena and the tools of market cultivation.

910B. **Advanced Research in Marketing II**  
Spring, 5(5-0) MTA 910A  
Continuation of MTA 910A.

911A. **History of Market Thought**  
Fall, 4(4-0) May reenroll for a maximum of 15 credits. MTA 851  
Traces the evolution of marketing institutions, techniques, theories and criticism. The influence of changing environmental and technological factors on marketing practice and thought. Readings in retrospective and original materials, discussion and research paper.

911B. **Seminar in Macro Marketing**  
Winter. 4(4-0) May reenroll for a maximum of 15 credits. MTA 911A  
Examines the relationships between competition, marketing and corporate and economic growth. Emphasis is given to a functional examination of competition and the central role of innovation in the process.

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**Mathematics**

801. **Elements of Algebra**  
Fall, Winter, Spring, Summer. 2(2-0)  
Current enrollment in MTH 981.

890. **Advanced Mathematics**  
Fall, Winter, Spring. 3(3-0)  
Current enrollment in MTH 982, one year of high school algebra, satisfactory score on placement exam.

909. **Theory of Transportation-Distribution Systems**  
Fall. 4(4-0)  
Examines the functions of transportation-distribution systems. Develops the relevant elements of networks, systems, and economic theory with empirical design. Applications to the design evaluation, and control of representative macro and micro systems.

910A. **Advanced Research in Marketing I**  
Winter, 4(4-0) Second-year doctoral students in marketing  
Advanced concepts and quantitative methods in the scientific investigation of marketing phenomena and the tools of market cultivation.

910B. **Advanced Research in Marketing II**  
Spring, 5(5-0) MTA 910A  
Continuation of MTA 910A.

911A. **History of Market Thought**  
Fall, 4(4-0) May reenroll for a maximum of 15 credits. MTA 851  
Traces the evolution of marketing institutions, techniques, theories and criticism. The influence of changing environmental and technological factors on marketing practice and thought. Readings in retrospective and original materials, discussion and research paper.

911B. **Seminar in Macro Marketing**  
Winter. 4(4-0) May reenroll for a maximum of 15 credits. MTA 911A  
Examines the relationships between competition, marketing and corporate and economic growth. Emphasis is given to a functional examination of competition and the central role of innovation in the process.