376. Historical Problems in Technical Change  
Fall, Spring. 4(4-0) Juniors or approval of school.  
Each which influence technical change. Exploration of both historical and contemporary problems of technology and technical change.

377. The Natural Environment: Perceptions and Practices  
Spring. 4(4-0) Sophomores.  
Factors which have influenced U.S. environmental attitudes as reflected in art and literature. Ways in which changing attitudes have led to changes in legislation and practice.

378. Popular Culture and Technical Change  
Winter. 4(4-0) Juniors or approval of school. Interdepartmental with American Studies.  
Interrelationships among elements of mass culture and technical change. Introduction to relevant research methods.

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

490. Directed Study  
Fall, Winter, Spring. 1 to 6 credits. May reenroll for a maximum of 12 credits. Juniors and approval of school.  
Faculty directed studies in curricular areas which are normally related to regular course offerings.  
A. Directed Study—General  
B. Directed Study—Biological  
C. Directed Study—Chemistry/Physics  
D. Directed Study—Science and Technology Studies

491. Senior Seminar I  
Fall, Winter, Spring. 4(4-0) Seniors or approval of school.  
Selected problems in the study of science and technology as human activities, using philosophical, historical, literary, social science or interdisciplinary perspectives or methods. Thesis topic refined and outlined.

492. Senior Seminar II  
Fall, Winter, Spring. 4(4-0) LBS 491 or written approval of instructor.  
Research, write, defend and evaluate a significant thesis paper in science and technology studies or related interdisciplinary science problems.

493. Field Experience  
Fall, Winter, Spring. 1 to 15 credits. May reenroll for a maximum of 16 credits. Approval required.  
Experiential learning related to the public or private practice of science and technology.

495. Independent Study  
Fall, Winter, Spring. 1 to 12 credits. May reenroll for a maximum of 12 credits. Juniors and approval of school.  
Student conceived individual courses of study in curricular areas. Preliminary faculty approval and continuing guidance.  
A. Independent Study—General  
B. Independent Study—Biological  
C. Independent Study—Chemistry/Physics  
D. Independent Study—Science and Technology Studies

MANAGEMENT MGT

College of Business and Graduate School of Business Administration

101. Introduction to Business  
Fall, Winter, Spring. 4(4-0) Approval of department.  
Functions performed by business and the role of administration in our economy as a whole and in the operation of a specific business. Four major objectives: to aid students in choosing a vocation, to help business majors select a field of concentration, to show the place of specialized techniques presented in more advanced business courses, and to give some familiarity with common business practices and terminology.

302. Organization and Management  
Fall, Winter, Spring. 4(4-0) Juniors in the College of Business or approval of department. Interdepartmental with the Department of Marketing and Transportation Administration.  
Executive roles and functions in the business enterprise and other goal directed institutions; organization design; organization/environment interaction; analysis of internal organization structure, leadership, motivation, conflict, organization change and development.

303. Materials and Logistics Management  
Fall, Winter, Spring. 4(4-0) Juniors in the College of Business or approval of department. Interdepartmental with the Department of Marketing and Transportation Administration.  

304. Operations Planning and Control  
Winter, Spring. 4(4-0) MGT 303 or approval of department. Interdepartmental with the Department of Marketing and Transportation Administration.  
Managing the production system. Product development, process selection, facilities location and layout; staffing; materials, cost and quality control.

305. Purchasing Management  
Fall, Winter, Spring. 4(4-0) MGT 303 or approval of department. Interdepartmental with the Department of Marketing and Transportation Administration.  

306. Analysis of Processes and Systems  
Fall, Winter, Spring. 4(4-0) MGT 315, MTA 317 or concurrently.  
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.

310. Fundamentals of Personnel Management  
Fall, Winter, Spring. 4(4-0) Juniors.  
Formulation and administration of employee relations policies in the business enterprise; human resource utilization; introduction to personnel staffing, training and development, performance appraisal, compensation, and labor relations.

341. Transportation Distribution Systems  
Fall, Winter, Spring. 4(4-0) MGT 303 or approval of department. Interdepartmental with and administered by the Department of Marketing and Transportation Administration.  
Application of economic and business principles to transportation and distribution systems, functional analysis of all major transport modes. Identification of major issues, analysis of alternatives and discussion of probable future outcomes.

342. Traffic Management  
Winter, Spring. 4(4-0) MGT 303 or approval of department. Interdepartmental with and administered by the Department of Marketing and Transportation Administration.  
Basic practices related to purchasing and operating transportation services for private and public enterprises.

403. Research and Negotiation for Purchasing Materials and Management  
Fall, Winter, Spring. 4(4-0) MGT 305 or approval of department. Interdepartmental with and administered by the Department of Marketing and Transportation Administration.  
Applied research and planning focusing on the purchasing and materials management functions in organizations. Preparation for and conducting purchase negotiations. Field research studies. Administration of the research and planning effort.

405. Operations Management Topics  
Fall, Winter, Spring. 4(4-0) MGT 304 or approval of department. Interdepartmental with the Department of Marketing and Transportation Administration.  
Consideration of current and controversial questions in operations management. Field experiences in study operations and policies in business. Industry studies; impact of new technology and government regulations.

406. Introduction to Management Science  
Winter. 4(4-0) MGT 306.  
Quantitative models and techniques applied to various business problems involving the computer in the problem solving process. Topics include linear programming, integer programming, dynamic programming, queuing problems, Bayesian Decision Theory, theory of games.
407. Materials and Logistics Policy
Winter, Spring. 4(4-0) MGT 303 plus 12 credits in MRM Program. Interdepartmental
with and administered by the Department of
Marketing and Transportation Administration.
Analysis of business administration cases incorpo­
rating topical coverage of the entire materials and
logistics management program.

409. Business Policy
Fall, Winter, Spring, Summer. 4(4-0)
Seniors in business administration and MGT
302; AFA 391; MTA 300.
Problems, methods, and analytical frameworks for
building and maintaining consistent and ef­
efective policy frameworks in the business enter­
prise. Written and oral analyses are made of
comprehensive cases cutting across the major 
functions within business organizations. Team
and individual reports are required.

411. Staffing the Organization
Fall. 4(4-0) MGT 310; MTA 317.
Job design; job analysis; employment planning;
recruiting; selection, and placement; employ­
ment interviewing and testing; validation of se­
lection procedures; affirmative action
constraints; EOOC guidelines; induction and
orientation of employees.

412. Appraisal, Compensation and
Wage and salary administration; job evaluation;
employee motivation; performance appraisal;
ranking to pay to performance; financial and
nonfinancial incentives; equity considerations;
employee benefits.

413. Occupational Safety and Health
Fall, Winter. 4(4-0) MGT 316.
Programs and procedures for control of work ac­
cidents and maintenance of health in business
and other organizations. Analysis of costs related
to employee and product safety. Administration of
a safe program in compliance with New
Federal law.

415. Managerial Approaches to
Winter, Spring. 4(4-0) MGT 302 or
Junior non-business majors.
Union-management problems and managerial
strategy and tactics in collective bargaining—
the union challenge, legal constraints, negotia­
tions, and operating under the contract.

417. Minorities and Women in the
Fall, Spring. 4(4-0) Senior majors or
World of Work
approval of department. Interdepartmental
with the School of Social Work.
Racial, ethnic, sexual and other minority experi­
ences and problems in the world of work.
Awareness training approach (what it's like to be
... ) featuring movies, games, subgroups dis­
cussing and encounter-type exercises.

419. Group Dynamics and
Spring. 4(4-0) MGT 302. Students may
Organization Development
not receive credit in both MGT 419 and PSE 336.
Macro and micro models of organizational be­
avor applied to organizational planning and
development. Includes organization planning and
design, design strategies (product, function, ma­
tix, other); organization-environment inter­
face, motivation, leadership, group processes,
conflict management, the managerial role.

426. Personnel Training and Individual
Fall. 4(4-0) MGT 310.
The training and development function; career
stages and career planning; needs analysis;
training and individual development tech­
niques; evaluation of training and employee de­
velopment programs.

445. Physical Distribution Management
Fall, Winter, Spring. 4(4-0) MGT 303
Interdepartmental with and administered by the Department of
Marketing and Transportation Administration.
Micro analysis of public and private physical dis­
tribution systems. Emphasis on component parts
of the movement system; analytical tools used in
planning, implementing and controlling the sys­
tem.

500. Materials and Logistics
Management
Fall, Winter, Spring, Summer. 4(4-0)
Graduate students. Interdepartmental with the Department of
Marketing and Transportation Administration.
Management concepts and frameworks for ac­
quision, conversion and distribution processes.
Impact on business and social systems, produc­
tivity and profits. Emphasis on planning, analy­
sis and control of purchasing, production and
physical distribution.

601. Operations Management
Winter. 4(4-0) MGT 800 or approval of department.
Interdepartmental with the Department of
Marketing and Transportation Adminis­
tration.
Managing the production system. Strategies of
product and process selection. Design of produc­
tion facilities; location, layout and capacity. Or­
ganizing and staffing operations and work
measurement. Controlling quality and costs.

803. Purchasing Administration
Winter, Spring. 4(4-0) MGT 800. Inter­
departmental with the Department of
Marketing and Transportation Administration.
Purchasing objectives, responsibilities, policies and
organization. Source selection, evaluation and
development. Negotiations. Purchase planning
and evaluation.

805. Organization and Management
Fall, Winter, Spring, Summer. 4(4-0)
Approval of department.
Macro and micro models of organizational be­
avor applied to organizational planning and
development. Includes organization planning and
design, design strategies (product, function, ma­
tix, other); organization-environment inter­
face, motivation, leadership, group processes,
conflict management, the managerial role.

807. Administrative Policy
Fall, Winter, Spring. Summer. 4(4-0)
Approval of department.
Application of administrative theory and tech­
niques to business problems. Cases cut­
ting across major functions within business
organization. Cases viewed from standpoint of
general management with consideration of so­
cial and physical environmental forces sur­
rounding the firm.

808. Seminar in Management,
Organization, and Administration
Fall, Winter, Spring. Summer. 4(4-0)
May reenroll for a maximum of 12 credits.
Philosophy, practice, research, and current
problems in management, organization, and ad­
mnistration. Historical and current literature,
lectures, discussion, individual research, cases
and plant visits are methods of study used in vari­
ants.

809. Transportation Distribution
Fall, Winter, Spring, Summer. 4(4-0)
Interdepartmental with and administered by the De­
partment of Marketing and Transportation Adminis­
tration.
Planning and control of the enterprise's trans­
portation and physical distribution system.

810. Personnel Management
Fall, Winter, Summer. 4(4-0) MGT
806.
Management of the personnel function; person­
nel policy formulation; the role of the personnel
executive; personnel staffing, training and de­
velopment, performance appraisal, compensa­
tion and benefits, labor relations; relevant
legislation and judicial decisions.

811. Organizational Staffing
Fall, Winter, Spring. 4(4-0) MGT
810.
Job design and analysis, recruitment selection
and placement; employment interviewing and
testing; validation of employment criteria and
selection procedures; induction and orientation
of employees; equal opportunity and affirmative
action requirements are stressed.

812. Systems Design Modeling
Spring. 4(4-0) MGT 800. Interdepart­
mental with and administered by the Depart­
ment of Marketing and Transportation Adminis­
tration.
Research procedure and planning models for de­
sign of the firm's logistical system. Emphasis on
situational analysis; research methodology, data
analysis, analytical techniques and implementa­
tion.
815. **Business and Material Forecasting**  
Fall, 4(4-0) MGT 800 or approval of department. Interdepartmental with the Department of Marketing and Transportation Administration.

Causes and consequences of supply dynamics. Analyses and forecasts of national and international markets and purchasing business trends. Influences of material resource problems on policies, strategies, and behaviors.

816. **Transportation Policy and Plans**  
Fall, Winter. 4(4-0) MGT 800. Interdepartmental with and administered by the Department of Marketing and Transportation Administration.

An operational model and theoretical perspective on national policies that are apt to shape the future of the transportation system. Interaction of government, carriers, and user logistics and distribution strategies.

817. **Women, Minorities and Management**  
Spring. 4(4-0) MGT 896.

Women and minorities in the world of work; management issues specific to race and sex; entry, training, staff-line relationship, peer relations, legal, environmental, behavioral aspects; marriage and dual careers; implications for the individual and the organization.

818. **Supervisory and Executive Development**  
Fall, Spring, Summer. 4(4-0) MGT 806 or MGT 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; impact of antecedents of executive role performance; role of training programs.

821. **Production and Inventory Management**  
Fall, Winter, Spring. 4(4-0) MGT 800 or approval of department. Interdepartmental with the Department of Marketing and Transportation Administration.

Theory and practice of production and inventory planning and control. Focus on computer based planning systems for material requirements including aggregate planning, master scheduling, capacity planning, shop floor control and inventory planning.

826. **Personnel Training and Individual Development**  
Winter. 4(4-0) MGT 810.

Training and development of personnel at all levels of the business enterprise; planning, implementing and evaluating training programs; career stages and career planning; matching individual and organizational development needs.

831. **Computers and Systems Analysis for Business**  
Fall, Spring. 4(4-0) MTH 111, STT 315 or concurrently or 12 credits of college mathematics. Open only to MBA candidates without background in computer usage and systems analysis.

Computer programming and systems analysis in business administration.

832. **Statistical Methods for Business**  
Fall, Spring. 4(4-0) MTH 111, STT 315. Open only to MBA candidates without background in statistics.

Statistics for analysis and research in business.

833. **Decision-Making Models**  
Fall, Winter, Spring, Summer. 4(4-0) MGT 831, MGT 852; AFA 840 or concurrently.

Normative decision analysis in business under different assumptions of information availability.

834. **Linear Optimization Models**  
Fall. 4(4-0) MGT 833, MTH 334 or EC 480.


835. **Nonlinear Optimization Models**  
Winter. 4(4-0) MTH 213, MGT 834 or CHE 465. Students may not receive credit for both SYS 835 and MGT 835.


836. **Applied Stochastic Processes for Business**  
Spring. 4(4-0) MGT 833, MTH 228, STT 423.

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.

837. **Systems Simulation**  
Fall. 4(4-0) MGT 833. 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.

841. **Materials and Logistics**  
Management Policy  
Spring. 4(4-0) MGT 800 plus 30 credits in the MBA Program. Interdepartmental with and administered by the Department of Marketing and Transportation Administration.

Case course that integrates the materials and logistics management program. Emphasis on problem recognition, applying course materials and preparation of plans that improve total systems performance.

848. **Management Science Applications**  
Summer. 4(4-0) MGT 833.

Analysis of cases utilizing techniques of management science. Problem definition, data collection, and problem solving and implementation.

860. **Corporation Management and Society**  
Spring. 4(4-0) MGT 806.

Analysis of the emerging character of administrative structure of the large corporation. Administrative bureaucracy, corporate government, stockholder and director relationships. Examination of ethics of decision making, strategic values and priorities basic to resource allocation decisions.

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, 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. 1 to 4 credits. May be repeated for a maximum of 12 credits. Approval of department.

906. **Behavioral Research: Organization**  
Winter. 3 credits. MTA 605.

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.

907. **Seminar in Organizational Behavior**  
Fall. 4(4-0) MGT 808.

Directed reading on the behavior of individuals within business organizations. Theory and research in motivation, leadership, and group dynamics are covered.

908. **Seminar in Organization Theory**  
Winter. 4(4-0) MGT 806. Doctoral candidates; master's candidates with approval of department. Interdepartmental with the Department of Psychology.

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.

912. **Special Topics Research Seminar**  
Fall, Winter, Spring. 2 to 4 credits. May be repeated for a maximum of 12 credits. Approval of department.

Specialized topics in management.

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