

**Description — Lyman Briggs College  
of  
Courses**

**332. Modern Drama**  
Winter. 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. 1(0-3) ZOL 303 concurrently. Interdepartmental with the Zoology Department. Laboratory examination of form and function of representative vertebrate and invertebrate animals.

**372. Introduction to Symbolic Logic**  
Fall, Winter. 4(4-0) Sophomores or approval of college.

Concepts, notation and application of truth-functional and quantificational logic. Special topics may include axiomatics, meta-theory, modal logic, fallacies, paradoxes, inductive argument, the justification of logic.

**373. Introduction to the Philosophy of Science**  
Winter, Spring. 4(4-0) 372. Juniors or approval of college.

Philosophical problems about the character and justification of scientific knowledge. Possible topics: concept formation, theory construction, scientific explanation, confirmation theory, "logic" of discovery, philosophical implications of physical theories.

**374. Historical Problems in the Biological Sciences**  
Fall, Winter. 4(4-0) Juniors or approval of college.

Various themes or periods in the biological sciences. The course may emphasize the pattern of theoretical development, changes in explanatory ideals, the interaction of external factors and scientific ideas, etc.

**375. Historical Problems in the Physical Sciences**  
Spring. 4(4-0) Juniors or approval of college.

Various themes or periods in the physical sciences. The course may emphasize the pattern of theoretical development, changes in explanatory ideals, the interaction of external factors and scientific ideas, etc.

**376. Historical Problems in Technical Change**  
Fall, Spring. 4(4-0) Juniors or approval of college.

Factors which influence technical change. Exploration of both historical and contemporary problems of technology and technical change.

**483. Philosophy of Physical Science**  
Fall, Spring. 4(4-0) Nine credits in physical science or approval of department. Interdepartmental with the Department of Philosophy.

Philosophical problems of the physical sciences. The topics will be taken from such areas as: quantum mechanics, space-time, classical mechanics, relativity.

**484. 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.

**490. 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.

- A. Directed Study—General
- B. Directed Study—Biology
- C. Directed Study—Chemistry/Physics
- D. Directed Study—Mathematics
- E. Directed Study—Science Studies

**491. 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.

**492. 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 courses of study in curricular areas. Preliminary faculty approval and continuing guidance.

- A. Independent Study—General
- B. Independent Study—Biology
- C. Independent Study—Chemistry/Physics
- D. Independent Study—Mathematics
- E. Independent Study—Science Studies

**MANAGEMENT MGT**

**College of Business**

**101. Introduction to Business**  
Fall, Winter, Spring. 4(4-0) University College students or 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.

**300. Operations Planning**  
Fall, Spring. 4(4-0) CPS 110, STT 315, AFA 202.

Operations Management—functions and technologies. Planning and acquiring physical facilities, work design and work measurement, acquisition and management of materials.

**301. Operations Control**  
Winter. 4(4-0) 300.

Analysis and control of operations. Production control, product reliability, maintenance, cost control and management information systems.

**302. 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 executive roles and functions in the business enterprise 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.

**305. 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.

**306. Analysis of Processes and Systems**  
Fall, Winter, Spring. 4(4-0) CPS 110, STT 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.

**310. 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.

**405. 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.

**406. Introduction to Management Science**  
Winter. 4(4-0) 306.

Quantitative models and techniques applied to various business problems integrating the computer into the problem solving process. 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 302; 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 business 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. 4(4-0) Juniors; 302 for majors.  
Programs and procedures for control of work accidents and maintenance of health in business and other organizations. Analysis of costs 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.  
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 union challenge, 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, subgroup discussions and encounter-type exercises.
- 468. 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 arranged 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, practices and problems relating to the procurement and control of materials in business organizations.
- IDC. Seminar in Industrial Relations**  
For course description, see Interdisciplinary Courses.
- 806. Organization and Administration**  
Fall, Winter, Spring, Summer. 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 889; plus 30 credits in the MBA core program.  
Application of administrative theory and techniques to business situations through cases 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, Organization, and Administration**  
Fall, Winter, Spring, Summer. 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.
- 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.
- CONTEMPORARY ISSUES IN ADMINISTRATION.** Spring.  
Recent and current developments in the administration of business enterprises. Examination of theory and practice.
- ORGANIZATION THEORY.** Winter, Summer.  
Critical and comparative consideration of organization theory with special reference to industrial organizations. Problems of organization structure and administrative practice in the management of business concerns are analyzed in the light of objectives, environment, and current theories.
- 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, communications, conflict management, morale, motivation, authority, power, examined by means of cases, role playing, laboratory exercises, and study of behavioral science research findings.
- 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 antecedents of executive 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 STT 315 or concurrently or 12 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 STT 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, Summer. 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 228, STT 423.  
Linear Programming; basic concepts and terminology. Model building with LP with applications to problems from business. The simplex method. Introduction to dual problems. Economic interpretations of duality. Post-optimality analysis.
- 835. Nonlinear Optimization Models**  
Winter. 4(4-0) 834.  
Nonlinear optimization—examples and applications. Kuhn-Tucker Theory. Saddle point optimality conditions. Algorithms for problems with constraints. Unconstrained optimization: introduction to search methods.

**Descriptions — Management  
of  
Courses**

**836. 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.

**860. 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.

**880. 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.

**881. Organization and Control in the Political Economy: Selected Problems**

Spring. 4(4-0) Approval of instructor. Interdepartmental with 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.

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. Behavioral Research: Business Executive**

Spring. 3 credits. 906.

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) 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) 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) 836, STT 423, MTH 228. 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.

**948. Mathematical Programming For Business**

Spring. 4(4-0) 836, MTH 334, 426, STT 863. Interdepartmental with the Statistics and Probability Department.

Large mathematical programs with special structure. Duality and decomposition in mathematical programming. Basic theory of dynamic programming; multistage decision processes and the principle of optimality. Risk, uncertainty, and introduction to stochastic and adaptive control processes.

**949. Advanced Applied Stochastic Processes**

Winter. 4(4-0) 836, 937. Interdepartmental with the Statistics and Probability Department.

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. Research**

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

**MARKETING AND  
TRANSPORTATION  
ADMINISTRATION**

MTA

**College of Business**

**300. Consumption and Marketing Organization**

Fall, Winter, Spring, Summer. 4(2-2) EC 200.

Adjustment of the firm to its market environment with emphasis on competitive strategy. Assessment of market forces and opportunities with reference to social, political, economic and technological forces affecting distribution methods and institutions. Structural organization of marketing system-functions involved in effective market performance. Small group problems involving analysis of costs and efficiency.

**301. Management of Marketing Effort**

Fall, Winter, Spring. 4(2-2) 300.

Market management in relation to total enterprise. Problems, analytical tools and approaches to decisions concerning allocation of funds to various means of market cultivation. Development of promotional strategy, price policy and management of field selling effort. Particular attention to role of marketing research, forecasting, budgets, organization arrangements and control techniques. Use of cases in small groups.

**311. Principles of Selling**

Fall, Winter, Spring, Summer. 3(2-1)

Nature of personal selling and its requirements. Functional relationships of selling in marketing mix. Buyer motivations and selling theories, with application to various buyer-seller situations.

**313. Sales Management**

Fall, Winter, Spring, Summer. 4(4-0) 300.

Techniques and policies in the administration of the personal sales organization with respect to the marketing strategies involved. Emphasis on the sales management problems of manufacturers.

**316. Fundamentals of Statistical Inference**

Fall, Winter, Spring, Summer. 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.

**317. Quantitative Business Research Methods**

Fall, Winter, Spring, Summer. 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.

**335. Food Processing and Distribution Management**

(435.) 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.

**341. Transport Requirements and Programming**

Fall, Spring, Summer. 4(4-0) EC 200.

Transportation and distribution systems are presented as functional entities capable of introducing change into the economic system and capable of reacting to change in other segments of the economy. Subject matter includes regional economic growth, inter-regional trade, macro-location theory, transportation and distribution system alternatives, regional transportation policy.

**351. Retail Administration**

Fall, Winter, Spring, Summer. 4(4-0)

300. Survey of retailing and its role in distribution. Management policy areas studied include administrative organization, locational decisions, buying, pricing, merchandising, sales promotion, personnel and over-all planning and coordination in retailing firms. Analysis of illustrative cases.

**400H. Honors Work**

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.

**409. Field Studies in Business**

Fall, Winter, Spring, Summer. Variable credit. May re-enroll 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.