South Asian Languages SAL

101. South Asian Languages—Elementary

Fall. 4(3-2) May re-enroll for 101-102-103 sequence in more than one South Asian Language.

The spoken language. Emphasis on intensive pronunciation, comprehension drills, and developing sentence structure. Orthography introduced.

102. South Asian Languages—Elementary

Winter. 4(3-2) May re-enroll for 101-102-103 sequence in more than one South Asian Language. 101.

Continuation of 101.

103. South Asian Languages—Elementary

Spring. 4(3-2) May re-enroll for 101-102-103 sequence in more than one South Asian Language. 102.

Continuation of 102.

201. South Asian Languages—Intermediate

Fall. 4(3-2) May re-enroll for 201-202-203 sequence in more than one South Asian Language. 103.

Continued development of oral and aural skills. Study of grammar, readings in simple texts and exercises in composition.

202. South Asian Languages—Intermediate

Winter. 4(3-2) May re-enroll for 201-202-203 sequence in more than one South Asian Language. 201.

Continuation of 201.

203. South Asian Languages—Intermediate

Spring. 4(3-2) May re-enroll for 201-202-203 sequence in more than one South Asian Language. 202.

Continuation of 202.

LYMAN BRIGGS COLLEGE LBC

111. College Algebra

Fall. 5(5-0) Placement test. Students may not receive credit in both LBC 111 and MTH 111.

The topics studied will include polynomials, simultaneous linear equations, matrices, sets, functions, inequalities, and straight line analytic geometry; with computing techniques and problems included in the first three topics.

112. Calculus I with Analytic Geometry

Fall, Winter, Spring. 5(5-0) 111 or MTH 109; 125. Students may not receive credit in both LBC 112 and MTH 112.

The topics studied will include limits, derivatives, continuous functions, differentiable functions, plane analytic geometry, and anti-derivatives; with computing techniques and problems used to clarify and extend the material.

113. Analytical Geometry, Calculus and Numercial Analysis

Fall, Winter, Spring. 5(4-1) 112. Students may not receive credit for both LBC 113 and MTH 113.

Initial value problems and their applications, definite and indefinite integrals, exponential functions, infinite series, natural logarithms; trigonometric functions, higher derivatives, inverse functions, and linear 2nd order differential equations. Numerical methods will be used extensively.

125. Elements of Computer Programming

Fall, Winter. 3(3-0) MTH 109 or LBC 111 concurrently. Students may not receive credit in LBC 125 and CPS 110 or CPS 120.

FORTRAN programming; arithmetic and logical operations; functions and subroutines; matrix and vector operations; computer solution of simultaneous equations.

131. Third Culture Rhetoric I

Fall, Winter. 3(3-0)

Instruction and practice in expository writing and oral communication, with paper and report topics drawn from readings and college lectures which relate science to society. Emphasis is given to the development of the capacity to communicate scientific concepts to non-scientists.

132. Third Culture Rhetoric II

Winter, Spring. 3(3-0) 131.

A continuation of 131, with investigative papers and more formal oral presentations. Some emphasis on independent study.

140. Biology I

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

Plant and animal diversity. Morphology, adaptation and evaluation as these pertain to the position the organism maintains in its environment.

141. Biology II

Fall, Winter, Spring. 3(2-3) 140.

Maintenance and manipulation of materials, energy, space and information at the cellular and tissue level of organization.

150. Physics—Elementary Concepts

Fall. 1(1-0) MTH 108 or 109 or LBC 111 and LBC 151 concurrently.

Elementary concepts of mechanics, electricity, magnetism and optics.

151. Introduction to Chemistry and Physics I

Fall. 4(4-3) MTH 108 or 109 or LBC 111 concurrently; high school physics or 150 concurrently.

Fundamental techniques of quantitative scientific investigation; gas laws, kinetic theory and thermodynamics.

152. Introduction to Chemistry and Physics II

Winter. 4(4-3) 151.

Topics in modern physics: photons, electrons, atoms and nuclei; radioactivity, nuclear reactions; Bohr theory of the hydrogen atom; special theory of relativity.

153. Introduction to Chemistry and Physics III

Spring. 4(4-3) 152.

Topics in modern chemistry: atomic structure, chemical bonding, molecular orbitals; stoichiometry, chemical dynamics and equilibria, fundamentals of organic chemistry.

214. Calculus, Vectors, and Numerical Analysis

Fall, Winter, Spring. 5(3-2) 113. Students may not receive credit in both LBC 214 and MTH 214.

Linear 2nd order differential equations with constant coefficients, linear spaces, linear operators, matrices, inner product length, determinants, 1st order systems of linear differential equations. Numerical methods will be used extensively.

215. Calculus, Differential Equations and Numerical Analysis

Fall, Winter, Spring. 5(5-0) 214.

Continuation of 214. Topics will include systems of differential equations and calculus of functions of several variables.

251. Introduction to Chemistry and Physics IV

Fall. 4(4-3) 153.

Classical physics; kinematics and dynamics of particles and rigid bodies, mechanical waves and fluid mechanics; electricity, magnetism, electromagnetism, wave optics.

252. Introduction to Chemistry and Physics V

Winter. 4(4-3) 251.

Chemistry of non-metals, organic chemistry and coordination chemistry.

253. Introduction to Chemistry and Physics VI

Spring. 4(4-3) 252.

Quantum mechanics and the structure of matter: atomic molecular and solid-state physics, quantum-mechanical devices and effects, nuclear models and nuclear energy levels.

290. Special Problems

Fall, Winter, Spring, Summer. 1 or 2 credits. May re-enroll for a maximum of 6 credits. Approval of college.

295. Independent Study

Fall, Winter, Spring, Summer. 1 to 4 credits. May re-enroll for a maximum of 12 credits. Approval of college.

Independent study for qualified students under direction of a faculty member.

331. Modern Fiction

Fall. 3(3-0) 132.

The study of recent short stories and novels, particularly those which might have a special value for the student of science. Student may submit original work of a fictional nature in partial fulfillment of course requirements. Selected students may meet course requirements through independent study.

332. Modern Drama

Winter. 3(3-0) 132.

The study of recent plays which have social or literary significance. Student may submit original work of a dramatic nature in partial fulfillment of course requirements. Selected students may meet course requirements through indpendent study.

333. Modern Poetry

Spring. 3(3-0) 132.

The study of recent verse of a literary or provocative nature. Student may submit original poetry in partial fulfillment of course requirements. Selected students may meet course requirements through independent study.

371. Introduction to the History of Science

Fall, Winter, Spring. 4(4-0) Juniors or approval of college.

Historical study of the origins, growth and influence of scientific ideas, techniques and knowledge in relation to the main currents of culture.

372. Introduction to Symbolic Logic

Fall, Winter. 4(4-0) Juniors or approval of college.

Rigorous introduction to the concepts, laws and metatheory of sentential and quantificational logic. Some attention shall be paid to philosophical implications and to practical applications of the systems treated.

373. Introduction to the Philosophy of Science

Winter, Spring. 4(4-0) 372.

Philosophical analysis of scientific knowledge. Topics treated shall include concept formation and theory construction, methods of discovery and justification, logic of testing and confirmation, logic of explanation.

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. Production Management

Fall, Winter. 4(4-0) CPS 110, STT 121, AFA 202.

Production management in manufacturing, service and distributive firms. Operations processes, analyses and decisions. Coordination of inventories, operations and quality. Work layout, methods and standards.

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

(303.) 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.

400H. Honors Work

Winter. 1 to 15 credits. Approval of department.

Investigates models, concepts and research findings of particular significance to effective decision-making in administration, organization and management.

401. Planning and Control of Production

Winter. 4(4-0) 300, 306; Seniors.

Production planning. Inventory control, machine loading, scheduling, expediting and critical path scheduling.

402. Product Reliability and Quality Control

Spring. 4(4-0) MTA 316.

Methods of achieving satisfactory standards of product quality and reliability at minimum cost.

405. Manufacturing Policy

Spring. 4(4-0) 300, 302; Seniors.

Policy formulation in production management. Coordinating staff functions and integrating production with other activities in the firm.

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. Safety, Health and Employee Benefits

(403.) Fall, Winter. 4(4-0) Juniors: 302 for majors.

Manpower maintenance problems in business organizations — organization and operation of safety and health programs, practices and trends in employee benefit plans. Focus is on issues and relevant research and techniques.

414. Human Relations in Business

(404.) 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

(307.) 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.

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.

803. Seminar in Industrial Relations

For course description, see **Interdisciplinary Courses.**

806. Administration: Theory and Action II

Fall, Winter, Spring, Summer. 4(4-0) MTA 805.

Organization structure and executive behavior and their interrelationships are examined. Focus is on internal structure and managerial processes through the examination of research literature on organization theory, and executive behavior. Organization systems and subsystems, group and individual interaction, administrative models and executive values.