301. Forage Crops
Fall. 3(2-2) Sophomores. Distribution, morphology, identification, physiology, management and utilization of forage crops for hay, silage, and pasture for livestock and for soil improvement and conservation.

350. Ecology and Physiology of Agricultural Plants
Spring. 3(3-0) Coreq. 202 or BOT 201. Interrelationships of physiological processes and environmental manipulation for higher yield of agricultural plants.

402. Principles of Weed Control
Fall. 3(2-2) Juniors. Interdepartmental and administered jointly with the Horticulture Department. Comprehensive study of principles underlying weed control practices, and factors involved in both mechanical and chemical control.

406. Crop Improvement and Seed Production
Winter. 4(3-2) Practical methods of crop improvement, seed processing, storage, cleaning, packing, and distribution; seed certification of small grains, legumes, corn, beans, potatoes, visits to seed agencies and seed farms.

407. Special Crop Problems
Fall. 3(3-0) Coreq. BOT 202 or BOT 201. Application of genetics and other sciences to special crop problems, production, physiology, ecology, breeding, turfgrass culture, weed control, nutritional quality, tropical crops, crop extension, and seed studies.

408. Principles of Plant Breeding
Winter. 4(3-2) 250. Interdepartmental with the Horticulture Department. Application of genetics and other sciences to breeding and improvement of agronomic and turfgrass crops.

415. Turfgrass Management
Spring. 3(2-2) Adaptation characteristics and utilization of turf grasses, management principles and physiological basis for establishment and maintenance of turf for lawns, athletic fields, golf courses, cemeteries, parks, highways and airfields.

420. Seminar
Winter. 1(1-0) May re-enroll for a maximum of 4 credits. Interdepartmental and administered jointly with Soil Science.

485. Seed Science
Spring. 3(3-0) Coreq. BOT 202 or BOT 201. Morphological and physiological changes during seed development, maturation and germination. Practical and biological aspects of seed drying, storage, deterioration, dormancy and quality. Current problems and research in seed science.

IDC. The Impact of Animal Resource Management Upon the World's Developing Nations
For course description, see Interdisciplinary Courses.

801. Crop Ecology
Fall of even-numbered years. 3(3-0) Coreq. 250. Crop improvement and seed production. Environment within the crop community and the environmental stresses limiting crop survival. Temperature, light, water and atmospheric stresses and variations in the crop canopy will be discussed.

803. Crop Physiology
Spring of even-numbered years. 3(3-0) Coreq. 250. Crop physiology. Role of physiological factors determining maximum crop yields and quality.

805. Herbicidal Action and Metabolism
Spring of odd-numbered years. 3(3-0) Coreq. 250. Reaction of the properties and characteristics of herbicides, the fundamental processes involved in the physiological action, behavior, and metabolism of herbicides.

814. Advanced Field Crop Studies
Fall, Winter, Spring. 1 to 3 credits. May re-enroll for a maximum of 6 credits. Interdepartmental and administered jointly with Soil Science. Advanced work in any of the following specialties: advanced field crop studies, management, physiology, ecology, breeding, turfgrass culture, weed control, nutritional quality, tropical crops, crop extension, and seed studies.

820. Seminar
Winter. 1(1-0) May re-enroll for a maximum of 4 credits. Interdepartmental and administered jointly with Soil Science. Studies and presentation of research in crop and soil sciences.

830. Physiological Genetics
Winter. 3(3-0) Coreq. 250. Physiological genetics. Physiological bases for genetic variation in higher plants including adaptive physiology, quantitative genetics, growth correlations, biochemical genetics, hybrid physiology, and geneology.

831. World Food Crops
Spring of odd-numbered years. 3(3-0) World food crop production and related systems of agriculture which provide this resource. The impact of modern discoveries and opportunities for change.

851. Quantitative Genetics in Plant Breeding
Fall of odd-numbered years. 4(3-1) One course in genetics or breeding, and one course in biometry, or approval of department. Genetic systems and quantitative inheritance in relation to the establishment of superior populations.

899. Research
Fall, Winter, Spring. Summer. Variable credit.

920. Design and Analysis of Agronomic Experiments
Spring. 3(3-0) Coreq. 250. Design and analysis of experiments in the biological sciences.

951. Cytogenetics in Plant Breeding
Winter of odd-numbered years. 3(3-0) Coreq. 250. Cytogenetics in plant breeding. Application of cytogenetic principles to plant breeding. Significance of recombination, role of induced mutations, polyploid, chromosome substitution, and aneuploid analysis as they apply to the field of plant breeding.

982. Plant Breeding Biometrics
Winter of even-numbered years. 4(3-2) Coreq. 250. Plant breeding biometrics. Biometrical genetics as it applies to plant breeding. Includes studies of path coefficients, partitioning of variance, and the principles of selection in a changing environment.

999. Research
Fall, Winter, Spring, Summer. Variable credit.
Descriptions—Dairy Science
of Courses

460. Special Problems
Fall, Winter, Spring, Summer. Variable credit. May re-enroll for a maximum of 10 credits. Approval of department.

IDC. The Impact of Animal Resource Management Upon the World's Developing Nations
For course description, see Interdisciplinary Courses.

850. Topics in Dairy Science
Fall, Winter, Spring. Variable credit. May re-enroll for credit. Approval of department.

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

925. Advanced Ruminant Nutrition
Fall of even-numbered years. 4(4-0)

945. Physiology of Mammalian Reproduction
Winter. 4(5-0) DRY or PSL 445 or approval of department. Interdepartmental with the Department of Physiology.

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

EARTH SCIENCE
See Geology.

ECONOMICS

College of Business
Courses are classified as follows:

Labor Economics and Industrial Relations—305, 455, 456, 457.
Money and Banking—318, 330, 470.
International Economics—427.
Public Finance—406, 407, 408.
Price and Value Theory—324, 325, 420.
History of Economic Thought—431, 432.
Industrial Organisation and Control—444, 445.

200. Introduction to Economics
Fall, Winter, Spring, Summer. 4(4-0)
Open to Freshmen. Students may begin sequence with either 200 or 201.

Problem of resource allocation; price determination (demand, supply), applications to agricultural policy; diminishing returns; behavior of the firm (determination of quantity of output, hiring of factors); aspects of international trade.

201. Introduction to Economics
Fall, Winter, Spring, Summer. 4(4-0)
Open to Freshmen. Students may begin sequence with either 200 or 201.

Problem of resource allocation; price determination (demand, supply), applications to agricultural policy; diminishing returns; behavior of the firm (determination of quantity of output, hiring of factors); aspects of international trade.

210. Fundamentals of Economics
Fall, Winter. 4(4-0) MTH 215 or 228; or concurrently. Students may not earn credit in 210 if they have taken credit in either 200 or 201.

Introductory course in economic theory, employing mathematics, when useful, as a tool analysis. Covers consumer and business behavior, markets and the price system, income distribution, and elements of employment theory.

251H. Households, Firms and Markets
Fall. 5(5-0) Honors College students.
Microeconomic theory and its applications to analysis and policy. Substitutes for 201, 324 and 325.

252H. Aggregative Economics and Public Policy
Winter. 5(5-0) Honors College students.
Theory of national income and its application to analysis and policy. Substitutes for 200, 324, and 321.

305. Industrial Relations and Trade Unionism
Fall, Winter, Spring. 3(5-0)

Development, aims, structure, and functions of labor and employer organizations. Their relation to economic, political, and legal institutions and their impact on society. Primary issues in collective bargaining.

318. Money, Credit and Banking
Fall, Winter, Spring. 4(4-0)

200 or 210.

Commercial banking and the money supply. The Federal Reserve System, the Treasury, and other financial institutions. Sources and uses of funds in the financial market.

320. Macroeconomics I
Fall, Winter, Spring, Summer. 3(3-0)

200 and 201 or 210.


321. Macroeconomics II
Fall, Winter, Spring, Summer. 3(3-0)

320.

Expansion of role of monetary factors in macroeconomic theory. Theories of economic growth and cycles. Study of macroeconomic problems of inflation, unemployment, and other current policy problems.

324. Microeconomics I
Fall, Winter, Spring, Summer. 3(3-0)

200 and 201, or 210.

Theory of production and cost. Theory of the firm under varying market structures.

325. Microeconomics II
Fall, Winter, Spring, Summer. 3(3-0)

200 and 201, or 210, and 314.


330. Investments and Security Markets
Fall, Spring. 3(3-0) 200 or 210.

The stock market: principles of investment; analytics of selected industries and corporations; regulation by the Securities and Exchange Commission.

337. American Social and Economic History: Foundations
Winter. 4(4-0) Interdepartmental with and administered by the History Department.

Multiple sources of economic growth in economic, social and political change, education, science and technology, political action, and other factors, mid-19th century.

338. American Social and Economic History: Modern Trends
Spring. 4(4-0) Interdepartmental with and administered by the History Department.

Urbanization, origins and implications of large-scale organizations in business and other sectors of society, and sources of economic growth since mid-19th century.

361. Economic Development of Asia
Fall. 3(3-0) 200 and 201 or 210.
Population and resources; comparison of three economic systems: Communism in China, free enterprise in Japan and socialism in India; the role of Japan in regional trade and development.

362. Economic Development of Latin America
Winter. 3(3-0) 200 and 201 or 210.
Concentration of political and economic power as related to income distribution, tax structures, agrarian reform; inflation; trade, exchange rates, integration; population and employment policy.

363. Economic Development of Tropical Africa
Spring. 3(3-0) 200 and 201 or 210.

Interdepartmental with Public Affairs Management.


371A. European Economic History to 1600
Fall. 4(4-0) Interdepartmental with and administered by the History Department.

Economic history of medieval and early modern Europe stressing the nature of agrarian societies, the growth of cities, the divergence of the European economies, and the Industrial Revolution in England.

371B. European Economic History After 1600
Winter. 4(4-0) Interdepartmental with and administered by the History Department.

The industrialization of Europe stressing urbanization, national rivalry, problems of the maturation of capitalist institutions, and the social and ecological impact of economic growth in the twentieth century.

400. Independent Study
Fall, Winter, Spring, Summer. 1 to 4 credits. Seniors or approval of department.

Research and reading course for students interested in doing independent work in economics.