444. Milk Secretion
Winter. 4(3-2) Interdepartmental and administered jointly with the Physiology Department.

445. Endocrinology and Reproduction of Farm Animals
Fall. 4(5-0) BCH 340. Interdepartmental and administered jointly with the Physiology Department.
Endocrine and reproductive systems are presented with emphasis upon characteristics which can be altered for economic benefit and upon causes, prevention, and treatment of endocrine abnormalities.

450. Special Problems
Fall, Winter, Spring, Summer. Variable credit. May re-enroll for a maximum of 10 credits. Approval of department.
1DC. 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.
Topics from breeding, management, nutrition, or physiology, changing from term to term to include recent technical advances.

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

925. Advanced Luminant Nutrition
Fall of even-numbered years. 4(4-0) BCH 452, PSL 601 or approval of department.
Microbiology, physiology and biochemistry of ruminant digestion and the absorption and metabolism of rumen fermentation products.

945. Physiology of Mammalian Reproduction
Winter. 4(5-0) DRY or PSL 445 or approval of department. Interdepartmental with the Department of Physiology.
Chemistry and biosynthesis of reproductive hormones. Gonadal, hypothalamic and pituitary development of reproductive potential. Ovulation, fertilization, implantation and placentation will be studied. Relationships of conceptus, uterus and corpus luteum. Parturition.

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

EARTH SCIENCE
See Geology.

EC

ECONOMICS

College of Business

Courses are classified as follows:
Money and Banking—318, 320, 470.
International Economics—427.
Public Finance—408, 407, 408.
Price and Value Theory—324, 325, 428.
History of Economic Thought—411, 412.

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 unemployment; meaning and determination of national income; the multiplier; the accelerator; fiscal policy; deficit spending; monetary policy; bases creation of money; international aspects of the employment problem.

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 and hire of factors); aspects of international trade.

210. Fundamentals of Economics
Fall, Winter. 4(4-0) MTH 215 or 225; or concurrently. Students may not earn credit in 210 if they have 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.

211. Introduction to Latin America III
For course description, see Interdisciplinary Courses.

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.

305. Industrial Relations and Trade Unions
Fall, Winter, Spring, Summer. 5(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, Summer. 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)
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. 3(3-0)
200 and 201, or 310.
Theory of production and cost. Theory of the firm under varying market structures.

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

330. Investments and Security Markets
Fall. Spring. 3(3-0) 200 or 210, Juniors.
The stock market; principles of investment; analysis 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 1800
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 1800
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.

406. Public Expenditure: Theory and Policy
Fall, Spring, 4(4-0) 201 or 210. Interdepartmental with Public Affairs Management. Expenditure theory; objectives and rationale of government activity in the market system; efficiency criteria in government decision-making; planning-programming-budgeting systems and cost-benefit analysis.

407. Public Revenues
Winter, 4(4-0) 201 or 210. Principles and theory of the distribution of tax burdens and the incidence of taxation. Income, sales, property, and other major revenue sources.

408. State and Local Finance
Spring, 4(4-0) Juniors. Fiscal problems at the state and local levels of government, including revenues, expenditures, borrowing, and intergovernmental fiscal relations.

410. Medical Economics
Spring, 3(3-0) 200, 201, or approval of department. Interdepartmental with the Department of Urban and Metropolitan Studies. Demand, supply and economic efficiency in the markets for health services. Demand for medical care, organization forms, methods of payment, utilization and cost, and public policy for health care.

412. The Economics of Poverty

413. Urban Economics
Fall, 4(4-0) 200, 201. Interdepartmental with the Department of Urban and Metropolitan Studies. Location theory and urban development. Economics of city size and urban-suburban conflict. Economic aspects of urban community problems like housing, transportation, welfare and poverty. Strategies for urban development.

417. Land Economics
Fall, Spring, 4(4-0) Interdepartmental with the Resource Development Department, Public Affairs Management and Food Systems Economics and Management and administered by the Resource Development Department. Factors affecting man's economic use of land and space resources. Input-output relationships; development, investment, and enterprise location decisions; land markets; property rights, area planning; zoning and land use controls.

421. Economic Thought I
Fall, Summer, 4(4-0) 200 and 201, or 210. Forerunners of classical economics. Development of classical economic thought from Adam Smith to J. S. Mill. The Socialist reaction.

422. Economic Thought II
Winter, Spring, 4(4-0) 200 and 201, or 210. The decline of classical economics and the rise of marginalist value and distribution theory. Marxism and institutionalism.

426. Introductory Mathematical Economics
Spring, 3(3-0) 320, 324; MTH 214. Mathematical analysis of production, cost, and consumer choice. Mathematical models of aggregative and general-equilibrium economic systems.

427. International Trade and Finance

430. Stagnation and Development in Emerging Societies
Winter, Summer, 4(4-0) 200 and 201, or 210. Obstacles to economic growth, theories of economic development, reorganization of agriculture and industry; problems in mobilizing the economy to accommodate new productive techniques; population problems.

431. Principal Issues in Promoting Economic Development
Spring, 4(4-0) 430. Structural change and growth, capital formation and investment criteria; financing development; foreign trade and finance in development; government and planning.

434. Comparative Economic Systems
Fall, Winter, Summer, 4(4-0) 200 and 201, or 210. Characteristics and functions of an economic system. Analysis of alternative patterns of economic control, planning and market structure. Experience under capitalism, socialism and mixed economies. Consideration of their theories and philosophies.

440. Radical Political Economy
Spring, 3(3-0) 200 and 201, or 210, or 251H and 255H. Development and contemporary characteristics of capitalism from Marxian-median perspective. Historical materialism and class analysis. Radical critique of modern economics, relationship of inequality, racism, alienation and other problems to the structure of capitalism.

444. Private Enterprise and Public Policy
Fall, Winter, Spring, Summer, 3(3-0) 201 or 210. Competition and monopoly in the American economy. Problems of antitrust.

445. Economics of Regulated Industries
Winter, 4(4-0) 444. Government policy and role of competition in the public utility and transportation industries.

451. Methods of Economic Research and Forecasting
Spring, 4(4-0) 339 and 334; EC 422 or 317. Research design, testing of economic hypotheses, elementary methods of projection, forecasting, estimation, and introduction to econometrics.

453. Women and Work: Issues and Policy Analysis
Winter, 3(3-0) PAM 201 or EC 200 or 201 or approval of department. Interdepartmental with and administered by Public Affairs Management. Quantity and quality of labor force participation by women, current status and past trends. Issues analyzed include differential earnings and occupations of men and women, employment discrimination and labor legislation.

455. Public Policy and Labor Relations
Fall, Winter, Spring, Summer, 5(5-0) 305. Evolution of public policy concerning trade unions and collective bargaining. Causes and effects of labor-management disputes; public and private methods and agencies for dispute settlement.

456. Economics of Social Security
Spring, 3(3-0) 305 or seniors. Problems of unemployment, old age, and medical care from standpoint of economic theory, political philosophy, and our changing economic and social structure. Workman's Compensation Laws, Railroad Retirement Act, Civil Service Retirement Act, and Social Security Act.

457. Manpower Economics
Fall, Winter, Summer, 5(5-0) 200 and 201, or 210. Leading theories explaining wage determination, wage differentials and trends in wage structure. Labor force composition, distribution of unemployment, labor mobility, and manpower utilization. Data sources and forecasting methods.

460. Regional Economics
Winter, 4(4-0) 417 or 324 or ESM 401. Interdepartmental with the Resource Development Department, Public Affairs Management and Food Systems Economics and Management and administered by the Resource Development Department. Forces affecting location decisions of firms, households and governments. Applications to agricultural, industrial, and regional developments.

463. Economics of Urban Education
Spring, 3(3-0) EC 201 or 210. Interdepartmental with and administered by the Department of Urban and Metropolitan Studies. Political economy of urban schools. Education as a commodity: efficient production and distribution, supply and demand for education, financing education, planning education to meet job needs and social mobility.
470. Monetary Theory
Fall. 3(3-0) 321.
Relationship between money and interest rates, prices and output.

480. Mathematics for Economists
Fall. 5(5-0) MTH 113, graduate status in either economics, agricultural economics or College of Business, or approval of department. Intermediate with and administered by the Mathematics Department.

481. Economic Analysis I
Fall, Winter. 4(4-0) 324.
Consumption, exchange and production.

482. Economic Analysis II
Winter, Spring. 4(4-0) 890.
The Firm. Behavior and price formation (competition, monopoly and mixed cases). Distribution.

483. Economic Analysis III
Spring, Summer. 4(4-0) Comparative statics analysis of macroeconomic problems.

500. Seminar in Industrial Relations
Fall, Spring. 3(3-0) Approval of department.

501A. Public Expenditures
Fall. 3(3-0) Approval of department.

501B. Public Revenues
Winter. 3(3-0) Approval of department.
Theory of taxation. Incidence and economic effects, especially on income and wealth distribution. Institutional and policy analysis of the U.S. federal tax system.

502A. State and Local Public Finance
Spring. 3(3-0) Approval of department.
State and local expenditure systems in theory and practice; tax and non-tax revenues; intergovernmental fiscal relationships; the fiscal problems of metropolitan governments.

510. Economics of Public Choice
Winter. 3(3-0) Approval of department. Intermediate with the Agricultural Economics and Resource Development Departments and administered by the Agricultural Economics Department.

511. Public Program Analysis
Spring, Summer. 3(3-0) FSM 401 or EC 324 or approval of department. Intermediate with the Resource Development and Agricultural Economics Departments and administered by the Agricultural Economics Department.
Application of cost-benefit analysis to public programs of resource development. Issues and case studies in budgeting, investment criteria, pricing, externalities, and coordination.

512A. Microeconomics I: Choice and Exchange
Fall. 3(3-0) 324, 325; 480 or MTH 215 or concurrently.
Consumption, exchange, the astatician of choices, involving time, introduction to welfare.

512B. Microeconomics II: Production and Distribution
Winter. 3(3-0) 812A.
Production—variable proportions, the multiproduct firm, programming analysis. Distribution—the micro theory.

513A. Macroeconomics I: Comparative Statics
Fall. 3(3-0) 320, 321; 480 or MTH 215 or concurrently.
Macro models and macro function; the interaction of macro markets.

513B. Macroeconomics II: Dynamics
Winter. 3(3-0) 813A.
Stochastic and dynamic models. Growth and technical change. The macro theory of distribution.

514. Labor Force Behavior
Spring. 4(4-0) 457. Intermediate with and administered by the School of Labor and Industrial Relations.
Theoretical and empirical analysis of factors affecting labor force participation rates, unemployment levels, employment distribution, hours of work, and labor mobility. Concepts and measurement methods.

515A. Monetary Theory
Fall. 3(3-0) 812C, 813C, and 835 and approval of department.
Monetary and interest theories.

515B. The Theory of Monetary Policy
Winter. 3(3-0) 815A or approval of department.
Theories of the transmission of monetary policy to output, employment and prices.

516. Problems in Monetary Policy
Spring. 3(3-0) 815B.
Goals and techniques of monetary policy.
841A. History of Economic Thought: Classical
Fall. 3(3-0)
Early thought, mercantilism, physiocracy, and classical economics.

841B. History of Economic Thought: Heterodox
Winter. 3(3-0)
Historicism, socialism, and institutionalism.

851. The Economics of Secular Change
Winter. 3(3-0) 310, 314, or approval of department.
Empirical studies of long-run economic trends and a consideration of alternative hypotheses explaining these trends including classical, Marxian, Hayekian, and other general theories of economic development. Population growth, technological change, capital formation, occupational distribution, urbanization, and international trade.

852. Economic Problems of Underdeveloped Areas
Spring. 3(3-0) 320, 324, or approval of department.
Overcoming problems relating to early stages of economic development: investment priorities, mobilizing savings, balance of payment considerations, and policies and programs of various types.

854. The Emergence of Commercial Capitalism
Winter of odd-numbered years. 3(3-0) 316, 318, 324. Interdepartmental with the Department of History.
The rise of the mercantilist economics of Europe with stress on the growth of internal and international trade and finance during the 16th and 17th centuries.

855. The Industrial Revolution in Europe
Winter of even-numbered years. 3(3-0) 316, 324. Interdepartmental with the Department of History.
The preconditions that led to the momentous changes in agriculture and industry in Europe from 1700-1914.

857. Wage Theory
Fall. 3(3-0) 320, 324, or approval of department. Interdepartmental with the School of Labor and Industrial Relations.
Advanced analysis of theories of wage determination; labor market research; economic effects of collective bargaining upon the national wage structure, output, employment, distribution of national income, the price level; nature and effects of government wage policies.

858. Industrial Relations
Winter. 3(3-0) 305 and approval of department. Open to graduate students in economics and related fields such as labor and industrial relations, sociology, psychology, industrial relations, and political science. Interdepartmental with and administered by the School of Labor and Industrial Relations.
Problems and issues in the administration and negotiation of collective bargaining agreements; includes both economic and noneconomic aspects of industrial relations policies and practices.

860. Economics of the Firm
Fall. Winter. Summer. 4(4-0) Graduate students in Business Administration. Not open to Economics majors.
Analysis of the firm. Problems facing management; integrating in optimal mix of products, pricing, competitive forces in markets affecting the firm.

861. American Economy
Fall. Winter, Spring, Summer. 4(4-0) Thirty credits in MBA core program. Not open to Economics and Agricultural Economics majors.

862. Business and Public Policy
Winter. Spring. 4(4-0) 860 or approval of department. Not open to majors.

876. Statistical Inference in Economics I
Fall. 3(3-0) 812A or 801; STT 440 or 863. Statistical methods. Interdepartmental with the Agricultural Economics, and Statistics and Probability Departments.

900. Selected Problems in Advanced Microeconomic Theory
Fall, Winter, Spring, Summer. 3(3-0) May re-enroll for a maximum of 12 credits. 812A, 812B, 812C, 813C.
Advanced applications of economic methodology to the analysis of household and firm behavior; risk, uncertainty, and transactions costs.

972. Methodological Approaches to Research
Fall of even-numbered years. Summer of odd-numbered years. 3(3-0) 312. Critical evaluation of research reports by staff and other students. Students writing doctoral dissertations in the appropriate areas are encouraged to participate in workshop and may do so while registered for 999.

990A. Monetary Theory and Policy Workshop
Winter. Spring. 3 to 6 credits. Approval of department.
Critical evaluation of research reports by staff and other students. Students writing doctoral dissertations in the appropriate areas are encouraged to participate in workshop and may do so while registered for 999.

990B. Industrial Organization and Public Policy Workshop
Fall, Winter, Spring. 3 to 6 credits. Approval of department.
Critical evaluation of research reports by staff and other students. Students writing doctoral dissertations in the appropriate areas are encouraged to participate in workshop and may do so while registered for 999.
990C. Mathematical Economics and Econometrics Workshop
Fall, Winter, Spring. 3 to 10 credits. 812A, 832, or approval of department. Interdepartmental with the Agricultural Economics Department.
Critical evaluation of research reports by staff and students. Students writing doctoral dissertations in the appropriate areas are encouraged to participate in workshop and may do so while registered for 999.

990D. Economic Development Workshop
Fall, Winter, Spring, Summer. 3 to 10 credits. 850, 851, 852 or approval of department.
Critical evaluation of research reports by staff and students. Students writing doctoral dissertations in Development are encouraged to participate in the workshop and may do so while registered for 999.

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

EDUCATION

College of Education

101A. Exploring Elementary Teaching
Fall, Winter, Spring. 3(1-4) Preparation major.
Emphasis on the nature of teaching in the elementary school achieved through field experience while serving as a teacher aide in an elementary classroom. Concurrent lecture sessions focus on techniques of classroom management and operation.

124. Introduction to Careers in Vocational and Practical Arts Education
Opportunities in teaching agriculture, business, home economics or industrial education and in closely related fields; analysis of student's potentialities for these fields.
A. Agriculture.
Fall. 2(1-2) Interdepartmental with Agriculture.
D. Industrial Arts
Winter and Fall of even-numbered years, Spring of odd-numbered years. 2(3-0)

141A. General Industrial Arts
Winter and Fall of odd-numbered years, Spring of even-numbered years. 3(0-6) Approval of department.
Introductory experiences in all major areas of industrial arts. Organized under a comprehensive general shop organization similar to that utilized in the modern secondary school.

141B. General Woodwork
Winter and Fall of odd-numbered years, Spring of even-numbered years. 3(0-6) Approval of department.
Handwork, patternwork, carpentry, introductory machinework, finishing. Designed to exemplify, in both organization and equipment, desirable practices in today's secondary schools.

200. Individual and the School
Fall, Winter, Spring, Summer. 5(3-2)
Sophomores. Must be admitted to a teacher education program.
Major psychological factors in the school learning-teaching situation; concepts in human development related to problems in the school situation. Teacher role in motivation, conceptual learning, problem solving, and the development of emotional behavior, attitudes and values; learning of skills; retention and transfer; and measurement of student abilities and achievement.

200A. Educational Psychology
Spring of odd-numbered years. 3(3-0) Approval of department.
Same goals as Education 200, but assumes a background in general psychology.

202A. Educational Psychology: Adolescence
Fall. 2(2-0) May not receive credit for 202A and 209A.
Emphasizes cognitive, affective and physical growth of adolescents; theories of learning as applied to secondary education; problems of early adolescence.

202B. Workshops in Secondary Education
Winter. 2(2-0) May not receive credit for 202B and 450. 202A.
Students select from a variety of single session workshops focusing on psychological and sociological aspects of teaching in secondary schools.

202C. Alternative Secondary School Structures
Spring. 2(2-0) May not receive credit for 202C and 450. 202B.
On-site examination of a variety of a secondary school organizational patterns, together with on-campus analysis of underlying theories of social organization and curriculum construction.

241A. Advanced Woodwork
Winter and Fall of even-numbered years, Spring of odd-numbered years. 3(0-6) 141B or approval of department.
Safe operation of woodworking machines in home and school shop. Care and maintenance of shop tools and equipment.

241B. General Metalwork
Winter and Fall of odd-numbered years, Spring of even-numbered years. 3(0-8) Approval of department.
Bench metal, sheet metal, forging, welding, casting, and machining. Designed to exemplify desirable facilities and course organization for the modern secondary school.

241C. Industrial Arts Crafts
Winter and Fall of even-numbered years, Spring of odd-numbered years. 3(0-8) Approval of department.
Typical crafts in outstanding public school programs of industrial arts. Work in plastics, leather, silver, aluminum, copper, metal engraving, lapidary, ceramics, and model making.

241D. Printing and Graphics
Winter and Fall of even-numbered years, Spring of odd-numbered years. 3(0-8) Approval of department.
Hand composition, press work, printing, book-binding, block printing, plate making, silk screen work, and photomechanical. Designed to exemplify a desirable approach to the work of this area in the modern secondary school.

302A. Teaching Skills Laboratory
Fall. 2(2-4) May not receive credit for 302A and 436. 202C.
Competency based instruction and field experience in selected generic teaching skills, including classroom management, secondary reading, data analysis, group and sociometric techniques, instructional planning, assessment and evaluation.

302B. Laboratory in Ethnic Values of Adolescents
Winter. 1(0-5) May not receive credit for 302B and 436. 302A.
Laboratory setting focusing on ethnic values, beliefs and attitudes and their impact on public secondary schools. Participation will include university students, high school and middle school minority and ethnic students.

302C. Clinical Field Experience in Secondary Teaching
Spring. 12 credits. May not receive credit for 302C and 436. 302B.
Clinical experience in secondary teaching. Supervised by subject specialists, SEPP program staff, and selected public school personnel. Is equivalent of 436. Student Teaching, in regular secondary education program, but is coupled with 362A and 302B into a one year integrated sequence of experiences under common supervision.

321A. Curriculum Methods and Materials—Elementary Education
Fall, Winter, Spring, Summer. 3(1-7) Juniors; 101A, 200. Must be taken concurrently with or prior to courses in 325 series.
Bases, scope, and sequence of curriculum in reading, language arts, and social studies; adaptation of principles to methods and materials of teaching in the elementary and middle school.

325A. Methods of Teaching Reading in the Elementary School
Fall, Winter, Spring, Summer. 3(3-0)
Junior.
Methods and materials of instruction of reading at elementary level. Analysis of learning and teaching problems, and study of concrete materials and classroom attack. Consideration of practical bearings of research and progressive theory on current practice.

325B. Teaching of Language Arts in Elementary Grades
Fall, Winter, Spring, Summer. 3(3-0) Juniors.
Course to acquaint prospective elementary teachers with content material and methods in language arts for grades below the seventh. Students also given opportunity to acquire skills in manuscript and blackboard writing.

325C. Critical Reading and Children's Literature
Fall, Winter, Spring, Summer. 3(3-0) Juniors.
Development of strategies for helping children to develop critical reading skills through literary experiences.

325D. Teaching of Social Studies in Elementary Grades
Fall, Winter, Spring, Summer. 3(3-0) Juniors.
Theory and practice of teaching social studies.
To help students develop understanding of philosophy and aims of social studies movement in elementary schools, and ability to further such aims through familiarity with a variety of materials, knowledge of social studies subject matter, and competence in using a variety of methods.