

## Descriptions - Criminal Justice

of

### Courses

#### 855. *Delinquency Prevention and Control*

Fall. 3(3-0)

Evaluation of primary and secondary delinquency prevention, control and treatment programs. Critical analysis of current major hypotheses, recent developments, and contributions by operational and academic sources.

#### 865. *Adult Corrections*

Fall. 3(3-0)

Traditional and contemporary correctional practices. Social, political, economic and organizational factors that determine correctional policies. Current trends in adult corrections.

#### 866. *Adult and Juvenile Correctional Program Management*

Winter. 3(3-0) C J 855 or C J 865.

Planning, organizing and operating adult and juvenile correctional programs on institutional and community levels.

#### 867. *Analysis and Evaluation of Prevention and Correctional Programs*

Spring. 3(3-0)

Analysis and evaluation of research relating to adult and juvenile prevention and correctional programming. Application of research design to program evaluation.

#### 871. *Law of Corrections*

Winter. 4(4-0) Majors or approval of school.

Constitutional limitations and impact of law on correctional practice. Due process, judicial sentencing, probation, prisoners' rights, parole grant, revocation of probation and parole.

#### 872. *Criminal Procedure*

Spring. 4(4-0) A law course.

Criminal procedure as applied to police and courts. Due process, Bill of Rights, right to counsel, search and seizure, confessions, bail, prosecution, guilty pleas, trial.

#### 874. *Law of Administrative Procedure*

Spring. 4(4-0) Majors or approval of school.

Powers and procedures of administrative agencies. Procedural issues and legal basis. Problems connected with administrative processes not subject to effective judicial or legislative supervision. Discretion, judicial review of administrative action and jurisdiction.

#### 880. *Planning in Criminal Justice*

Fall. 3(3-0) C J 492.

Models for planning. Empirical basis for organizational planning. Role of planning in operational administration. Assessment of current system capabilities.

#### 881. *Project and Program Implementation*

Winter. 3(3-0) C J 880 or approval of school.

Managerial strategies and factors involved in the effective implementation of projects and programs. Development and use of information and monitoring systems.

#### 882. *Evaluation Research in Criminal Justice*

Spring. 3(3-0) C J 880, C J 881.

The conduct and utilization of evaluative research in projects, programs and agencies. Strategies for conducting, interpreting and utilizing operational research.

#### 885. *Security Management*

Fall. 3(3-0) C J 485 or concurrently, or approval of instructor.

The organization and management of security units, in industry, businesses, government, institutions. The protection of manpower, facilities, and other assets. Administrative, legal and technical issues.

#### 890. *Practicum*

Fall, Winter, Spring, Summer. 1(0-4) to 6(0-24) Majors or approval of school.

Planned program of research observation, study and work in selected criminal justice agencies. Designed to supplement classroom study with participation in domestic and foreign criminal justice systems.

#### 892. *Quantitative Methods in Criminal Justice Research.*

Winter. 4(4-0) C J 492, C J 811.

Views the relationship and application of statistical techniques to theory building and concept construction. Gives an overview of statistical methods with an emphasis on those most useful for research in criminal justice.

#### 897. *Policy Change Paper*

Fall, Winter, Spring, Summer. 1 to 4 credits. May reenroll for a maximum of 4 credits. Majors or approval of school.

Development of plan for significant policy change and its implementation in a criminal justice agency.

#### 899. *Master's Thesis Research*

Fall, Winter, Spring, Summer. 1 to 12 credits. May reenroll for a maximum of 12 credits. Majors or approval of school.

Planned research and writing directed by student's thesis committee.

#### 930. *Seminar on Criminal Justice Systems*

Winter. 3(3-0) Graduate students.

Topical issues on the development, functioning, and interrelationships of components of criminal justice systems and how systemic coherence can be achieved within a democratic society.

#### 990. *Seminar in Criminal Justice and Criminology*

Fall. 3 to 5 credits. Graduate students.

Analysis of major research contributions to criminal justice and criminology.

#### 992. *Research Utilization and Application in Criminal Justice*

Spring. 3(3-0) Majors or approval of school.

Substantive and administrative problems of conducting research and existing attempts to solve these. Utilization of research in bringing about change in the criminal justice system. Methods of maximizing research utility.

## CROP AND SOIL SCIENCES

CSS

### College of Agriculture and Natural Resources

#### 101. *Crop Science*

Fall. 3(3-0)

Principles of identification, adaptation, management, and utilization of field crops for food and fiber. Fundamentals of crop management, breeding, weed control, crop quality, and tropical crops in world agriculture.

#### 202. *Soil and Our Environment*

Spring. 4(3-2) Not open to students with credit in CSS 210. Non-majors only.

Role of soil in growing plants, water use and conservation, nutrient cycling, fertilizers, environmental quality, animal health, anthropology and food-population dilemma.

#### 210. *Fundamentals of Soil Science*

Fall, Winter. 5(3-4) CEM 130. Not open to students with credit in CSS 202.

Nature of soils and their relation to plant growth, water regimes, nutrient cycling, erosion, environmental quality, plant composition, animal health and world food production.

#### 250. *Plant and Animal Genetics*

Winter. 5(5-0) B S 211.

Fundamentals of modern genetics with particular focus on problems and application in agriculture and natural resources.

#### 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.

#### 331. *Soil Management*

Winter. 4(4-0) CSS 210.

Management of soils, drainage, and irrigation, organic matter, tillage, rotation, conservation practices, soil reaction, lime, fertilizers, and micronutrients. Soil management vs. soil conservation. Special study in general crops, horticultural crops, greenhouse crops, turf and organic soils.

#### 380. *Ecology and Physiology of Agricultural Plants*

Spring. 3(3-0) FOR 220 or BOT 301.

Interrelationships of physiological processes and environmental manipulation for higher yield of agricultural plants.

#### 390. *Soil Conservation and Land Use*

Winter. 3(3-0) CSS 210.

Concepts of soil erosion by water and wind and methods for soil conservation including control of erosion and sedimentation. Interpretation of soil properties for land use decisions.

#### 402. *Principles of Weed Control in Field Crops*

Fall. 4(3-2) CEM 132, BOT 301.

Principles underlying weed control practices for agronomic crops. Factors involved in mechanical, chemical and biological control and basic physiological aspects of herbicide applications.

#### 406. *Crop Improvement and Seed Production*

Winter. 4(3-2)

Practical methods of crop improvement, seed production, storing, cleaning, packing, and distribution, seed certification of small grains, legumes, corn, beans, potatoes, visits to seed agencies and seed farms.

#### 408. *Principles of Plant Breeding*

Winter. 4(3-2) CSS 250. Interdepartmental with the Department of Horticulture.

Application of genetics and other sciences to breeding and improvement of agronomic and horticultural crops.

- 411. Special Problems in Agronomy**  
Fall, Winter, Spring, Summer. 1 to 4 credits. May reenroll for a maximum of 6 credits if different problem is taken.  
Special crop problems in production, physiology, ecology, weed control, turfgrass management, storage, preservation and seed studies. Special soils problems in fertility, geography, classification, conservation, management, organic soils and turfgrass soils.
- 412. Topics in Agronomy**  
Fall, Winter, Spring, Summer. 2(2-0) or 3(3-0) May reenroll for a maximum of 9 credits if different topics are taken. Approval of department.  
Topics will be selected from crop production, crop physiology, turfgrass management, organic soils, turfgrass soils, soil fertility and genetic analysis.
- 415. Turfgrass Management**  
Spring. 3(2-2)  
Adaptation characteristics and utilization of turf grasses, management principles and physiological bases for the establishment and maintenance of turf for lawns, athletic fields, golf courses, cemeteries, parks, highways and airfields.
- 420. Seminar**  
Winter. 1(1-0) May reenroll for a maximum of 4 credits.
- 424. Forest Soils**  
Spring. 3(2-3) CSS 210; Juniors or approval of department. Forestry majors: FOR 305, FOR 402, FOR 425, FOR 429 concurrently. Interdepartmental with and administered by the Department of Forestry.  
Interrelationships of forest site and the growth of trees. Properties, classification, inventory, productivity and management of forest soils. Effects of silvicultural and forest management practices on the soil.
- 425. Forest Soils Laboratory**  
Spring. 1(0-3) CSS 210; FOR 305, FOR 402, FOR 424, FOR 429 concurrently. Interdepartmental with and administered by the Department of Forestry.  
Exercises and field trips relating to properties, classification, inventory, productivity and management of forest soils. Extended field trips required.
- 430. Soil Fertility and Fertilizers**  
Spring. 5(4-1) CSS 210.  
Major, secondary and micronutrient elements of soils. Role of colloids in ion fixation and exchange, acidity, liming, fertilizer application, technology and soil-plant diagnosis.
- 440. Soil Biophysics**  
Winter. 3(3-0) CSS 210 and BOT 301; CSS 380 recommended.  
Salient features of soil physical and biological properties related to plant growth, principles and applications. Emphasis on root responses to the environment. Bioenergetics of the root-soil interface.
- 470. Soil Classification**  
Fall, Spring, Summer of odd-numbered years. 4(0-8) CSS 210 or approval of department.  
Determination of soil properties by field examination of soils. Classification of soils. Preparation of land use report based upon soil maps of assigned areas. Field trips required.
- 480. Soil Geography and Land Use of North America**  
Spring. 3(2-1) CSS 210 or approval of department.  
Properties, geography and dominant land use of the major soils of North America.
- 485. Seed Science**  
Spring. 3(3-2) Approval of department.  
Morphological and physiological changes during seed formation, development, maturation and germination. Practical and biological aspects of seed drying. Storage, deterioration, dormancy and quality. Current problems and research in seed science.
- 805. Herbicidal Action and Metabolism**  
Spring of odd-numbered years. 3(3-0) CSS 402; BOT 415 or concurrently.  
A study of the properties and characteristics of herbicides, the fundamental processes involved in the physiological action, behavior, and metabolism of herbicides.
- 811. Advanced Problems**  
Fall, Winter, Spring, Summer. 1 to 6 credits. May reenroll for a maximum of 8 credits for either a M.S. or Ph.D. degree program, or a maximum of 14 credits for both degree programs, if different topics are taken. Approval of department.  
Field crop problems in management, physiology, ecology, breeding, turfgrass culture, weed control, nutritional quality, tropical crops, crop extension and seed studies. Soils problems in biophysics, chemistry, classification, conservation, fertility, geography, management microbiology, biochemistry, micronutrients, micropedology, mineralogy, organic soils and physics.
- 812. Selected Topics**  
Fall, Winter, Spring, Summer. 2(2-0) or 3(3-0) May reenroll for a maximum of 9 credits if different topics are taken. Approval of department.  
Topics will be selected from physiology of herbicides, micronutrients, advanced soil physics, advanced soil chemistry.
- 820. Seminar**  
Winter, Spring. 1(1-0) May reenroll for a maximum of 3 credits.  
Studies and presentation of research in crop and soil sciences.
- 825. Clay Mineralogy**  
Winter. 4(3-4) CSS 840, CSS 850 or approval of department. Interdepartmental with and administered by the Department of Geology.  
Structures and properties of clays; their origins, occurrence, and utilization. Methods of studying clays including x-ray diffraction, differential thermal analysis, infrared absorption and other chemical and physical techniques.
- 830. Physiological Genetics**  
Winter. 3(3-0) Approval of department. Interdepartmental with and administered by the Department of Forestry.  
Physiological bases for genetic variation in higher plants including adaptive physiology, quantitative genetics, growth correlations, biochemical genetics, hybrid physiology, and genecology.
- 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.
- 833. Soil Fertility and Plant Nutrition**  
Winter. 3(3-0) CSS 430 or approval of department.  
Fundamental concepts in soil fertility and mineral nutrition of plants; fate of nutrients applied to soils, nutrient uptake, translocation and utilization by plants; principles of laboratory, greenhouse and field research methods.
- 840. Soil Physics**  
Fall. 5(3-6) CSS 430, CEM 162 or approval of department.  
Physical properties of soil (texture, structure, consistency, aeration, water, temperature, etc.), their quantitative measurement, and relation to plant growth, and agronomic and engineering practices.
- 842. Advanced Soil Microbiology**  
Fall of odd-numbered years. 3(3-0) MPH 425 or approval of department. Interdepartmental with and administered by the Department of Microbiology and Public Health.  
Biochemistry, biology, and community ecology of microorganisms indigenous to soil. Emphasis on current research problems.
- 843. Soil Microbiology Laboratory**  
Fall of odd-numbered years. 2(0-6) MPH 842 concurrently or approval of department. Interdepartmental with and administered by the Department of Microbiology and Public Health.  
Fundamental techniques of dealing with microorganisms indigenous to soil. Metabolic activity of microorganisms. Interaction between microorganisms and plants.
- 850. Soil Chemistry**  
Winter. 5(3-6) CSS 430; CEM 162, CEM 383; or approval of department.  
Chemistry of mineral weathering and soil formation, ion activities, ionic exchange and equilibrium reactions, soil pH, specific elements and their chemical analysis, and availability of nutrients to plants.
- 851. Developmental Genetics and Plant Breeding**  
Fall of odd-numbered years. 4(3-1) One course each in genetics, statistics and plant breeding.  
Plant breeding in relation to genetics of growth and development. Problem sets in statistical treatment of plant breeding data.
- 870. Origin and Classification of Soils**  
Winter. 4(3-2) CSS 470, CSS 840, or approval of department.  
Genesis, morphology and classification of major soils of the world. Relationships among soils in natural and cultural landscapes. How soil properties affect their use, management and conservation. Land classifications for various purposes.
- 899. Master's Thesis Research**  
Fall, Winter, Spring, Summer. Variable credit. Approval of department.

**Descriptions – Crop and Soil Sciences  
of  
Courses**

**920. Design and Analysis of Agronomic Experiments**  
Spring. 3(3-0) STT 423 or approval of department.

Constructing and analyzing designs for experimental investigations in the biological sciences.

**951. Cytogenetics in Plant Breeding**  
Winter of odd-numbered years. 3(3-0) BOT 427, BOT 828, or approval of department.

Application of cytogenetic principles to plant breeding. Significance of recombination, role of induced mutations, polyploid, chromosome substitution, and aneuploid analyses as they apply to the field of plant breeding.

**952. Plant Breeding Biometrics**  
Winter of even-numbered years. 4(3-2) Approval of department.

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. Doctoral Dissertation Research**  
Fall, Winter, Spring, Summer. Variable credit.

**DAIRY SCIENCE**

See Animal Science.

**EARTH SCIENCE**

See Geology.

**ECONOMICS**

**EC**

**College of Business**

Courses are classified as follows:

Applied Welfare Economics—410.  
Labor Economics and Industrial Relations—305, 306, 455, 457.

Money and Banking—318, 330, 470.

International Economics—428.

Public Finance—406, 407, 408.

Price and Value Theory—324, 325, 426.

Income and Employment Theory—326, 451, 470.

History of Economic Thought—421, 422.

Industrial Organization and Control—444, 445.

Economic Development, Regional Studies, and Comparative Economics Systems—430, 431, 434.

**200. Introduction to Macroeconomics**  
Fall, Winter, Spring, Summer. 4(4-0)  
Open to Freshmen. Students may begin sequence with either EC 200 or EC 201. Not open to students with credit in IDC 204.

Determinants of Gross National Product, unemployment, inflation and economic growth. National income accounting, fiscal policy; aggregate demand and supply management.

**201. Introduction to Microeconomics**  
Fall, Winter, Spring, Summer. 4(4-0)  
Open to Freshmen. Students may begin sequence with either EC 200 or EC 201. Not open to students with credit in IDC 205.

Economic institutions, reasoning and analysis. Consumption, production, determination of price and quantity in different markets, income distribution, market structure and normative analysis.

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

Economic principles, institutions and reasoning using mathematics, when useful, as a tool of analysis. Consumption, production, the market system, income distribution and elements of employment and inflation theory.

**251H. Households, Firms and Markets**  
Fall. 5(5-0) Honors College students.

Microeconomic theory and its applications to analysis and policy. Substitutes for EC 201, EC 324, and EC 325.

**252H. Macroeconomics and Public Policy**  
Winter. 5(5-0) Honors College students.

Theory of national income, unemployment, inflation and economic growth and its application to economic analysis and policy. Substitutes for EC 200, EC 326 and EC 327 combined.

**305. Industrial Relations and Trade Unionism**  
Fall, Winter, Spring, Summer. 4(4-0)

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.

**306. Government Programs for Workers**  
(456.) Winter. 4(4-0) EC 201. Interdepartmental with Public Affairs Management.

Economics of selected government institutions and programs for workers. Social security, worker's compensation, Unemployment Insurance, OSHA, employment and training programs, wages and hours legislation, anti-discrimination programs.

**318. Money, Credit and Banking**  
Fall, Winter, Spring, Summer. 4(4-0) EC 200 or EC 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.

**324. Microeconomics I**  
Fall, Winter, Spring, Summer. 3(3-0) EC 200 and EC 201, or EC 210.

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

**325. Microeconomics II**  
Fall, Winter, Spring, Summer. 3(3-0) EC 200 and EC 201, or EC 210, and EC 324.

Consumer choice and theory of demand. Theory of distribution and factor rewards. Welfare economics and general equilibrium theory.

**326. Macroeconomics I**  
(320.) Fall, Winter, Spring, Summer. 3(3-0) EC 200 and EC 201 or EC 210.

Review of national income accounting. Determination of aggregate output, employment, the price level, and the inflation rate. Policy applications.

**327. Macroeconomics II**  
(321.) Fall, Winter, Spring, Summer. 3(3-0) EC 326.

Consumption theories, investment theories, role of expectations, theories of economic growth and cycles, stabilization policies, and other advanced topics.

**330. Investments and Security Markets**  
Fall, Spring. 3(3-0) EC 200 or EC 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 Department of History.

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 Department of History.

Urbanization, origins and implications of largescale 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) EC 200 and EC 201 or EC 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) EC 200 and EC 201 or EC 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) EC 200 and EC 201 or EC 210. Interdepartmental with Public Affairs Management.

African economic development in historical perspective. Analysis of contemporary economic development problems faced by tropical African countries. Alternative strategies for African economic development.

**371A. European Economic History to 1800**  
Fall. 4(4-0) Interdepartmental with and administered by the Department of History.

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.