

876. Performance Measurement Techniques
Fall. 3(3-0) 313, 322, STT 441.
Performance evaluations on computer systems, evaluation of the central processor. Systems analysis, simulation, programmed measurement, and instrumental measurement techniques. Case studies.

884. Large Data Base Theory
Summer. 3(3-0) 313, 452, or approval of department.
Data base management constituent parts; data definition, data manipulation, data retrieval and report generation. Hierarchical, network and relational data base models. Schemas, sub-schemas and access methods. Analytic and theoretical treatment.

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

911. General Automata Theory I
Fall of odd-numbered years. 3(3-0) 423 or SYS 827 or approval of department. Interdepartmental with Electrical Engineering. Characterization of machines and programs as automata; mathematical decomposition of finite automata.

912. General Automata Theory II
Winter of even-numbered years. 3(3-0) 911. Interdepartmental with Electrical Engineering.
Reliability and redundancy of finite automata. Probabilistic sequential machines. Languages definable by probabilistic and deterministic automata. Axioms for equivalence of regular expressions.

913. General Automata Theory III
Spring of even-numbered years. 3(3-0) 912. Interdepartmental with Electrical Engineering.
Degrees of difficulty of computation. Models of parallel computation. Iterative automata.

944. Theory of Algorithms
Summer. 3(3-0) 832 or 912.
Formulation of computation concept and algorithm verification. Topics included are finite and infinite acceptors, recursive functions, program verification, decision problems, flowchart schemas, and fixpoint theory of programs.

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

CRIMINAL JUSTICE C J
College of Social Science

110. Introduction to Criminal Justice
Fall, Winter, Spring. 3(3-0)
Survey of agencies that compose the system: primarily the police, courts and corrections. Also, the processes of these components and their relationships, as well as related agencies involved are examined.

235. Criminology
Winter, Spring. 4(4-0) SOC 241 or C J 110 or approval of school. Interdepartmental and jointly administered with the Department of Sociology.
Crime analysed from sociological perspective: meaning of "crime", crime statistics, and measurement, theories of crime causation, crime typologies, e.g., professional organized, violent, sex, white-collar crimes, juvenile delinquency.

315. Criminal Investigation
(395.) Winter, Spring. 4(4-0) 375.
Theory of investigation, crime scene conduct, collection and preservation of physical evidence and methods used in scientific interpretation of evidence.

318. Community Relations in Criminal Justice
Fall, Winter, Spring. 4(4-0) 235.
Interdisciplinary survey of community relations in police and other criminal justice processes; theory and case studies. Emphasizes problem solving, conflict management, and community action in the prevention of civic disorder.

330. Organizational Theory in Criminal Justice
Fall, Winter. 4(4-0) 110, 235.
A historic and a comparative overview of the principles of organization used by criminal justice agencies. Current theories and research on organization, with focus on the needs of the criminal justice process.

335. Police Process
Fall, Winter, Spring. 4(4-0) 235.
Functional role of law enforcement within the criminal justice system. Law enforcement organizations and the function of operational units. Role of law enforcement in a democracy; service, crime deterrence, discretion, enforcement policies and evaluation of effectiveness.

355. Juvenile Justice Process
Fall, Winter, Spring. 4(4-0) 235.
Prevalent interdisciplinary issues, ideas, principles and assumptions pertaining to delinquency phenomena; an overview of variables related to delinquency, duties, and responsibilities.

365. Corrections Process
(368.) Fall, Winter, Spring. 4(4-0) 235.
The correctional modes applied to juvenile and adult offenders. Theoretical approaches to changing and controlling criminal behavior and practical limitations. Impact of methods on past correctional behavior.

375. Criminal Law Process
Fall, Winter, Spring. 5(5-0) 235.
Administration of criminal justice: investigation, detection, arrest, search, seizure, charging, adjudication, sentencing, probation, corrections, parole. Constitutional safeguards and legal controls on official action emphasized.

392. Criminal Justice Research and Innovation
Fall, Winter, Spring. 5(4-1) 110 and 235.
The utilization of research in planned change. Problems in conducting and interpreting research concerned with decision-making. The limitations of research and selected alternative strategies in bringing about change.

400H. Honors Study
Fall, Winter, Spring, Summer. 1 to 3 credits. May re-enroll for a maximum of 6 credits. Seniors or approval of instructor.
Individually selected programs of supervised group or individual study dealing with some phase of the criminal justice system.

401. Independent Study
Fall, Winter, Spring, Summer. 1 to 3 credits. May re-enroll for a maximum of 6 credits. 318, 335, 355, 365, 375, 392 or approval of instructor.
Individual study of the various fields of emphasis in criminal justice, under direct supervision of appropriate faculty member.

409. Issues in Criminal Justice
Fall, Winter, Spring, Summer. 3 or 4 credits. May re-enroll for a maximum of 15 credits when different topics are taken. 318, 335, 355, 365, 375, 392.
Forum for course offerings on special issues in criminal justice, by visiting instructors or regular faculty.

429K. Fundamentals of Traffic Law
Fall, Summer. 3(3-0) Interdepartmental with and administered by the College of Education.
Nature, function and application of traffic law as it applies to the safe and efficient movement of people and goods in a broadly conceived traffic accident prevention program.

433. Alcohol and Drugs: A Social Dilemma
(425.) Winter. 3(3-0) Seniors or approval of school. Interdepartmental with the College of Education.
An overview investigation of the substance abuse phenomena with emphasis on alcohol. Sociological, psychological and medical aspects are discussed with implication for prevention, treatment and rehabilitation.

435. Analysis of Police Operations
Winter, Spring. 4(4-0) 318, 335, 355, 365, 375, 392 or approval of school.
Organization and administration of line and staff functions of police units. Interrelationships of components. Analysis of total operations of the police, including personnel, budgeting, manpower allocation, enforcement policies and specialization.

440. Introduction to Highway Traffic Administration
Fall. 4(4-0) Approval of instructor.
Systems approach to highway traffic administration emphasizing the interrelationships among agencies having management responsibilities and their accident prevention and loss reduction countermeasures to combat system failures. Future needs and alternatives.

441. Police and Court Traffic Administration
Spring. 4(4-0) Approval of instructor.
Police and court traffic functions relative to other police and court functions in the criminal justice system. Systems approach to managing traffic accident prevention programs. Weaknesses, future needs and alternatives.

455. Analysis of Delinquency Programs
Winter, Spring. 4(4-0) 318, 335, 355, 365, 375, 392 or approval of school.
Complexity of delinquency phenomena; evolution of programs and organizations which prevent, evaluate and treat specific youth problems.

465. Analysis of Correctional Operations
Fall, Winter, Spring. 4(4-0) 318, 335, 355, 365, 392 or approval of school.
A critical analysis of existing institutions and community corrections programs; administrative methods of program implementation and evaluation. Prevalent correctional operational policies. Problems of effecting change.

**Descriptions — Criminal Justice
of
Courses**

472. Criminal Law

Fall, Spring. 4(4-0) 318, 335, 355, 365, 375, 392, or approval of school.

Substantive criminal law as a means of defining and preserving social values. Criminal law theory, legislative role in criminal justice, victimless crimes, survey of crimes and defenses, constitutional limitations.

485. Security Systems

Fall. 4(4-0)

Capabilities and limitations of security systems, both public and private, with particular reference to crime and crime-related problems. Interrelationships between security and other criminal justice agencies.

490. Criminal Justice Practicum

Fall, Winter, Spring, Summer. Variable credit. May re-enroll for a maximum of 12 credits. 318, 335, 355, 365, 375, 392; majors only.

Planned program of research internship, observation, study, and work in selected criminal justice agencies. Supplements classroom study with participation in criminal justice systems of United States and foreign nations.

492. Methods of Criminal Justice Research

Fall, Winter. 4(4-0) 318, 355, 365, 392 or approval of school.

Elements of scientific perspective; analysis of published reports to illustrate theory interacting with practice. Conceptual frameworks, negotiating access to and collection of data, design choice, analytic techniques, and final reporting.

495. Crime Prevention Seminar

Fall, Winter, Spring. 4(4-0) 318, 335, 355, 365, 375, 392, Seniors.

The prevention of crime and the concept of deterrence, stressing a systemic approach: the law, the police, the community, and corrections. A synthesis of the undergraduate program stressing a systemic perspective, commitment to planned change, and total community involvement.

801. Independent Study

Fall, Winter, Spring, Summer. 1 to 6 credits. May re-enroll for a maximum of 6 credits. Majors or approval of school.

Individual research and writing in student's field of interest. Requires approval and direction by professor associated with major field of interest.

809. Special Issues in Criminal Justice

Fall, Winter, Spring, Summer. 3 to 5 credits. May re-enroll for a maximum of 15 credits when different topics are taken. Majors or approval of school.

Forum for study of issues not given continuous consideration in the graduate program.

812. Criminal Justice Management Issues

Fall, Winter. 4(3-1) Majors or approval of school.

New management requirements of the criminal justice complex in transition. Problems and innovative concepts of criminal justice system development, decision theory, information needs, planning, budgeting, and new managerial perspectives.

813. Criminal Justice Personnel Systems Development

Winter, Spring. 4(3-1) 812.

Personnel administration approaches to improvement of criminal justice systems such as personnel administration by objectives, and systems analysis approach to human resource development models consonant with criminal justice systems evolution.

814. Fiscal Administration in Criminal Justice

Winter, Spring. 4(3-1) 812.

Transition from traditional budgeting to program budgeting and evaluation systems in criminal justice agencies. Implications of criminal justice systemic budgeting models.

815. Seminar in Criminal Investigation

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

Seminar in investigative techniques; criminalistics; case studies; including discussion on quantum of proof in criminal investigations and probative value of physical evidence.

816. Seminar in Forensic Science

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

An investigation of the role of forensic science in the administration of justice; case studies; laboratory techniques; interpretation of proof.

817. Independent Study in Forensic Science

Fall, Winter, Spring. 3(0-6) Majors or approval of school.

Directed laboratory work in forensic science.

818. Social Control, Criminal Justice and Community Relations

(823). Fall, Spring. 4(4-0) 318.

A broad-ranging seminar with a field studies aspect, emphasizing community responsibility in criminal justice processes, in the context of social change and social control.

822. Historical and Comparative Criminal Justice

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

Criminal justice systems are examined on a global basis exclusive of the United States. Emphasis is placed on major different legal philosophies.

825. Criminal Justice Educational Programming

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

Designed for students preparing for careers as criminal justice educators. Discussion of issues, administrative problems, and curricula for criminal justice programs.

826. Teaching Internship

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

Assumption of complete responsibility for teaching a course in a criminal justice program. Guidance in planning lesson content and evaluating instruction provided. Attendance at a series of associated seminars required.

830. Research for Planning

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

Techniques of applied research specially associated with the planning of operational and managerial criminal justice systems. Emphasis upon empirical basis for organizational planning programs.

831. Criminal Justice Systems Development

Fall, Winter. 4(4-0) 812 or approval of school.

Systems analysis approach to the development of criminal justice goals, priorities and strategies. Emphasis upon total systemic resource allocation, output and consonance.

832. Criminal Justice Information Systems

Fall, Spring. 4(4-0) 812 or approval of school.

The function, logical design and implementation of information systems in criminal justice agencies. Emphasis on use of information systems in managerial decision making.

833. Project Planning and Evaluation

Winter, Spring. 4(4-0) 492; 830 recommended.

Process of managing new projects from inception through implementation and evaluation. Establishing priorities, securing funding, administering projects and designing and implementing useful evaluative research. Individual exercises in designing projects.

835. Police Policy Development

Fall, Winter, Spring. 4(4-0) 812.

Public policy issues affecting the definition of police goals and strategies. Facts and values which influence policy decision; the processes of policy development and linkage with delivery systems.

836. Police Systems Development and Management

Fall, Winter, Spring. 4(4-0) 812.

Analytic techniques of defining goals, and designing, testing and evaluating police operational strategies. Managerial support requirements and goals of specific police systems.

840. Highway Traffic Administration

Winter. 4(4-0) Approval of instructor.

The Federal-state-local partnership in highway traffic administration. Laws, standards and policies regulating the accident prevention and loss reduction countermeasures of governmental agencies and private industry. Problems and needs.

855. Case Studies in Delinquency Control

Fall. 4(4-0) 355, 455.

Evaluation of primary and secondary delinquency prevention, control and treatment programs. Current hypotheses, recent developments in the field. Use of cases to evaluate past and current practices and future needs.

856. Juvenile Corrections

Spring. 4(4-0) 855.

A more theoretical extension of 355 and 455. Review and analysis of entire treatment and rehabilitation process for juvenile offenders.

865. Correctional Programming

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

Changing criminal behavior. Traditional and institutional methods and theories. Reintegration: high stress on offenders and community. Motivating the offender. Developing community resources and alternatives. Examining the change agent.

866. Correctional Management

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

Planning, organizing, controlling and evaluating in relation to measurable correctional objectives. Establishing objectives from well defined alternatives. Change capable administration styles and decision making as functions of objectives.

871. Law of Corrections

Spring. 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. Law of Criminal Procedure

Fall, Winter, Spring. 4(4-0) A law course.

Constitutional limitations on police activity. Due process, bill of rights, right to counsel, arrest, search and seizure, electronic eavesdropping, entrapment, confessions, lineups, scope of exclusionary rules.

874. Law of Administrative Procedure

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

General principles of administrative law, labor law. Application of principles. Law enforcement policy making. Implementation of constitutional safeguards. Police unions and political activity.

885. Security Management

Fall. 4(4-0) 485 or concurrently, or approval of instructor.

The organization and management of security units, in industry, businesses, governments, institutions, etc. The protection of manpower, facilities, and other assets. Administrative, legal and technical problems. Loss prevention and control.

886. Advanced Security Management

Winter. 4(4-0) 885.

Salient problems and issues of concern to professional security administrators. "Growing edge" technologies. Specialized programs—e.g., government internal security controls; employee dishonesty; shoplifting.

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

Spring. 4(4-0) 492.

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.

898. Comprehensive Readings

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

Individualized reading program for students who elect not to complete a thesis. Means of extending breadth and depth of course work to achieve mastery of criminal justice areas of interest.

899. Thesis Research

Fall, Winter, Spring, Summer. 1 to 6 credits. May re-enroll for a maximum of 6 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. Readings in Criminal Justice and Criminology

Fall. 3 to 5 credits. Graduate students.

Topical reading of major research contributions to criminology and criminal justice. Consideration of applicability of criminological research to functioning of the criminal justice system.

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. Soils and Man's Environment

Winter. 3(3-0) Interdepartmental with the departments of Fisheries and Wildlife and Resource Development, and Natural Resources.

Use of soil-water resources in a technological society as it relates to environmental quality. Nature of pollution problems and their possible solutions. Food production and world population.

210. Fundamentals of Soil Science

Fall, Winter. 5 credits.

Principles of the origin and development of soils. Relationship of properties to utilization and soil fertility to plant composition and animal health. Emphasis is placed on changing soils to serve man.

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) 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) 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

Fall. 3(2-2) Juniors. Interdepartmental and administered jointly with the Department of Horticulture.

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 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) 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

(407.) Fall, Winter, Spring, Summer. 1 to 4 credits. May re-enroll 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 re-enroll for a maximum of 9 credits of 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.