Criminal Justice—CJ

335 Police Process
Fall, Spring. 4(4-0) RB: (CJ 292) R: Open only to juniors or seniors in the Criminal Justice major.
Roles, responsibilities, issues, and trends pertinent to contemporary law enforcement organizations in contemporary society.

355 Juvenile Justice Process
Fall, Spring. 4(4-0) P.M: (CJ 220) R: Open only to juniors or seniors in the Criminal Justice major.
The juvenile justice system and law. Theories of juvenile delinquency and deviance. Sociological, psychological, and anthropological perspectives.

365 Corrections Process
Fall, Spring. 4(4-0) RB: (CJ 292) R: Open only to juniors or seniors in the Criminal Justice major.
Historical and contemporary views of offender management and treatment. Corrections system operation. Effects of institutionalization. Alternatives to incarceration.

375 Criminal Law Process
Fall, Spring. 4(4-0) RB: (CJ 110 or concurrent and CJ 292) R: Open only to juniors or seniors in Criminal Law Process.
Administration of criminal law. Investigation, prosecution, adjudication, and sentencing. Constitutional safeguards and legal controls on official action.

385 Introduction to Private Security
Fall. 3(3-0) R: Not open to freshmen or sophomores.
Relationships of private protective services with public law enforcement. Individuals, businesses, and governments providing prevention, protection, investigation, and disaster recovery services. Protection of persons, property, and information.

400H Honors Study
Fall, Spring. Summer. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Open only to Honors College seniors and approval of school.
Faculty-supervised group or individual study dealing with a phase of the criminal justice system.

421 Minorities, Crime, and Social Policy
Spring of odd years. 3(3-0) P.M: (CJ 110 or SOC 100) R: Open only to juniors or seniors in Criminal Justice.
A socio-historical analysis of the effects of race and ethnicity on legitimate social opportunities, criminal behavior, victimization, and differential judicial processing. Analysis of the impact of assimilation and acculturation on criminal behavior, victimization, and criminal justice processes.

422 Comparative and Historical Criminal Justice
Fall of odd years. 3(3-0) RB: (CJ 110) R: Open only to juniors or seniors in the Criminal Justice major.
Comparative study of criminal justice systems. Theories, types, and effects of intervention.

425 Women and Criminal Justice
Spring of even years. 3(3-0) Interdepartmental with Women's Studies. RB: (CJ 220 or WS 201) R: Open only to juniors or seniors in Criminal Justice.
Theories on women's victimization and criminality. Women's experiences as victims, offenders, and criminal justice employees. Laws and their effects on the rights of women in the criminal justice system.

432 Community Policing
Spring. 3(3-0) RB: (CJ 335) R: Open only to juniors or seniors in the Criminal Justice major.
Community policing philosophy, applications, issues, and contemporary research. Community policing models.

433 Law Enforcement Intelligence Operations
Spring. 3(3-0) RB: (CJ 335) R: Open only to juniors or seniors in the Criminal Justice major.
Law enforcement intelligence as an analytic tool for case development and resource allocation. Historical, ethical, legal, and operational issues affecting current practice.

434 Police Administration (W)
Fall. 3(3-0) P.M: Completion of Tier I writing requirement. RB: (CJ 335) R: Open only to seniors in the Criminal Justice major.
Organizational theory, leadership, communications, and labor relations in police administration. Historical and legal perspectives.

435 Investigation Procedures
Fall. 3(3-0) RB: (CJ 375) R: Open only to seniors in the Criminal Justice major.

455 Delinquency and Treatment Approaches
Spring. 3(3-0) R: (CJ 355) R: Open only to juniors or seniors in the Criminal Justice major.
Investigation and evaluation of delinquency. Prevention programs and treatment approaches. Implementation and assessments of correctional and community intervention strategies in agency settings.

456 Criminal Careers and Career Criminals (W)
Spring. 3(3-0) P.M: Completion of Tier I writing requirement. RB: (CJ 355 or CJ 365) R: Open only to seniors in the Criminal Justice major.

465 Correctional Programming and Analysis
Spring. 3(3-0) RB: (CJ 355 or CJ 365) R: Open only to juniors or seniors in Criminal Justice.
Contemporary institutional and community correctional programs. Research on adult and juvenile crime prevention, diversion, and treatment programs.

466 Corrections Organizations and Systems (W)
Fall. 3(3-0) P.M: Completion of Tier I writing requirement. RB: (CJ 355 or CJ 365) R: Open only to seniors in the Criminal Justice major.
Management of correctional organizations. Interactions between correctional organizations and their political and cultural environments.

471 Law of Corrections
Fall of odd years. 3(3-0) RB: (CJ 375) R: Open only to juniors or seniors in the Criminal Justice major.
Constitutional limitations and the impact of law on correctional practice. Due process, prisoners' rights, and parole and probation.

474 Law and Criminal Justice Policy
Spring. 4(4-0) RB: (CJ 375) R: Open only to juniors or seniors in the Criminal Justice or Interdisciplinary Studies in Social Science major.
Impact of law on police practices, court processes, and corrections institutions and programs. Development, implementation, and evaluation of judicial policies.

485 Asset Protection Management (W)
Spring. 3(3-0) P.M: Completion of Tier I writing requirement. RB: (CJ 385) R: Open only to seniors in the Criminal Justice major.
Risk analysis, security surveys, and audits to control losses due to crime, errors, and safety and environmental hazards. Management of asset protection and loss prevention programs in business, industry, and government.

490 Independent Study
Fall, Spring. Summer. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. RB: (CJ 292) R: Open only to juniors or seniors in the Criminal Justice major. Approval of school.
Individual study in fields of criminal justice, under direct supervision of a faculty member.

491 Topics in Criminal Justice
Fall, Spring. 2 to 4 credits. A student may earn a maximum of 10 credits in all enrollments for this course. RB: (CJ 292) R: Open only to juniors or seniors in the Criminal Justice major. Approval of school.
Special issues in criminal justice.

494 Criminal Justice Practicum
Fall, Spring, Summer. 3 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course. RB: (CJ 335 and CJ 355 and CJ 365 and CJ 375) R: Open only to juniors or seniors in the Criminal Justice major. Approval of school.
Observation, participation and study in selected criminal justice agencies.

CROP AND SOIL SCIENCES

Department of Crop and Soil Sciences
College of Agriculture and Natural Resources

100 Crop Production
Fall. 3(2-2) R: Open only to students in the Institute of Agricultural Technology. SA: CSS 054 Not open to students with credit in CSS 101 or CSS 054.
Basic principles of crop production including soil fertility, weed control, tillage, cultivar selection, row spacing, crop rotation, and environmental concerns. Seed, crop, and weed identification.

101 Introduction to Crop Science
Fall. 3(2-2)
164 Golf Course Design and Construction Techniques
Fall, 2(2-0) RB: (CSS 210 and CSS 232) Offered first ten weeks of semester.

178 Golf Turf Irrigation
Spring, 2(3-0) RB: Not open to students with credit in CSS 071. Not open to students with credit in CSS 078. Offered first ten weeks of semester. Golf course irrigation systems: installation and maintenance including water management.

181 Pesticide and Fertilizer Application Technology
Spring, 3(3-3) SA: CSS 081 Effective and efficient application of pesticides and fertilizers to turf and ornamentals. Pesticide handling, legal, and environmental concerns. Calibration of equipment.

192 Professional Development Seminar I
Spring, 1(0-2) R: Open only to students in the Department of Crop and Soil Sciences. Career development, critical issues analysis, resume writing, scientific presentations and public speaking in crop and soil sciences.

201 Forage Crops
Fall, 3(2-2) Forage crop production, management, and utilization. Crop identification. Soil fertilization. Planting and harvesting of grasses and legumes.

210 Fundamentals of Soil and Landscape Science
Fall, Spring, 3(2-3) Interdepartmental with Forestry. RB: (CEM 141) Agricultural and natural resource ecosystems: soil, vegetation and ground water components. Energy, water and nutrient cycles. Soil classification and mapping. Land management and use issues.

211 Turfgrass and the Environment
Spring, 2(3-0) P:M: (CSS 232) RB: (CSS 210) R: Open only to students in the Institute of Agricultural Technology. Pesticide and nutrient fate, site assessment, fuel use, equipment washing systems and criteria for recognizing sensitive sites. Conservation and best management practices to maximize protection of natural resources. Offered first ten weeks of semester.

222 New Horizons in Biotechnology
Fall, 2(2-0) Interdepartmental with Entomology. Perspectives on biotechnology for safer food production, environmental quality, and improved human health. Impacts of biotechnology on the national economy. Political and ethical ramifications of applied biotechnology.

232 Introduction to Turfgrass Management
Fall, 3(2-2) P:M: (CSS 210 or concurrently) RB: (CSS 110 or CSE 101) Turfgrass utilization, identification, establishment and management principles. Responses to various cultural practices.

242 Athletic Field Maintenance
Fall, 2(2-0) P:M: (CSS 232) Art and science of athletic field maintenance including root-zone modification, traffic wear management, field preparation techniques, wet weather strategies, safety concerns, legal issues, and crisis management. Field trips required.

262 Turfgrass Management Seminar
Fall, 1(0-2) R: A student may earn a maximum of 2 credits in all enrollments for this course. P:M: (CSS 232 or concurrently) Presentations by individuals involved in turfgrass and golf course management. Topics include golf course construction and operations, preparation for tournaments, and public relations.

267 Turfgrass Practices

269 Turfgrass Strategies
Spring, 2(3-0) P:M: (CSS 232) Issues in turfgrass management including employee relations, construction, and environmental problems. Offered first ten weeks of semester.

272 Turfgrass Soil Management
Fall, 2(2-2) RB: (CSS 043 or CSS 210) Not open to students with credit in CSS 044 or CSS 342. Impact of fertilization programs on turfgrasses and the environment. Irrigation, drainage, cultivation, top dressing, amendments and pH control of turfgrass soils.

282 Turfgrass Physiology
Spring, 2(3-0) P:M: (CSS 232) RB: (PLB 105) Not open to students with credit in CSS 332. Physiological principles of turfgrass growth and development. Water relations, light, temperature, respiration, photosynthesis, mineral nutrition, and hormone action. Impact of mowing, cultivation, and traffic on turfgrass growth. Offered first ten weeks of semester.

289 Civilizations, Food Crops and the Environment
Fall, Spring, 3(3-0) Interdepartmental with Agriculture and Natural Resources. Administered by College of Agriculture and Natural Resources. SA: CSS 289 Role of the major food crops in the survival of civilizations and cultures from the past to the present, and the resulting environmental impacts.
Crop and Soil Sciences—CSS

404 Forest and Agricultural Ecology
Fall. 3(3-0) Interdepartmental with Forestry. Administered by Department of Forestry. P:M: (CSS 210) and (BOT 105 or BS 110) RB: (ZOL 355)
Ecological interactions are crucial to the sustainable management of crop and forest ecosystems. Plant resources, competition, community development and dynamics, biodiversity, primary productivity, nutrient cycling, ecosystem structure and function, and impacts of global environmental change.

404L Forest and Agricultural Ecology Laboratory
Fall. 1(0-3) Interdepartmental with Forestry. Administered by Department of Forestry. P:M: (CSS 210) and (BOT 105 or BS 110) and (FOR 404 or concurrently) RB: (ZOL 355)
Field studies and data analysis of ecological processes central to the sustainable management of forest and agricultural resources. Field exercises cover primary production, community structure, soil resources, biodiversity, succession, nutrient cycling, critiques of primary literature. Two weekend field trips required.

406 Seed Production and Technology
Fall of even years. 3(2-2) P:M: (CSS 101 and CSS 350) R: Not open to freshmen or sophomores. Principles and practices of field seed production. Crop improvement, variety release, seed production, seed technology and evaluation involved in producing high quality field crop seed.

425 Microbial Ecology
Spring. 3(0-5) Interdepartmental with Microbiology and Molecular Genetics. Administered by Department of Microbiology and Molecular Genetics. RB: (MMG 301) SA: MPH 425
Microbial population and community interactions. Microbial activities in natural systems, including associations with plants or animals.

426 Biogeochemistry
Summer. 3 credits. Summer: Given only at W.K. Kellogg Biological Station. Interdepartmental with Microbiology and Molecular Genetics; Geological Sciences; Zoology. Administered by Department of Microbiology and Molecular Genetics. RB: (BS 110 or LBS 144 or LBS 148 or BS 111 or LBS 145 or LBS 149H) and (CEM 143 or CEM 251) SA: MPH 426
Integration of the principles of ecology, microbiology, geochemistry, and environmental chemistry. Societal applications of research in aquatic and terrestrial habitats.

430 Soil Fertility and Chemistry

431 Soil and Plant Resources for Sustained World Food and Fiber Production
Spring of odd years. 3(0-3) P:M: (CSS 101 and CSS 210)
World food and fiber production capacities related to soil and climatic resources. Management and utilization of genetic resources for sustained production of human foods and animal feeds.

440 Soil Biophysics
Fall of even years. 3(2-2) P:M: (CSS 210) R: Not open to freshmen or sophomores. Plant growth properties and soil physical conditions which influence productivity. Principles and applications of soil structure, soil texture, soil aeration, mechanical impedance, and root responses to the environment.

441 Plant Breeding and Biotechnology
Spring of even years. 4(3-2) Interdepartmental with Forestry; Horticulture. P:M: (CSS 350) Plant improvement by genetic manipulation. Genetic variability in plants. Traditional and biotechnological means of creating and disseminating recombinant genotypes and cultivars.

451 Cellular and Molecular Principles and Techniques for Plant Sciences
Spring. 4(2-6) Interdepartmental with Forestry, Horticulture. RB: (CSS 350 or ZOL 341)
Principles, concepts, and techniques of agricultural plant biotechnology. Recombinant DNA technology, plant molecular biology, transformation, cell tissue, and organ culture in relation to plant improvement.

452 Watershed Concepts
Fall, Spring, Summer. 3(3-0) Interdepartmental with Resource Development; Biosystems Engineering; Forestry; Fisheries and Wildlife. Administered by Department of Resource Development. P:M: (RD 324 and ZOL 355) RB: organic chemistry
Watershed hydrology and management. The hydrologic cycle, water quality, aquatic ecosystems and social systems. Laws and institutions for managing water resources.

455 Pollutants in the Soil Environment
Fall. 3(3-0) P:M: (CEM 143) and completion of Tier I writing requirement. R: Open only to seniors or graduate students. Chemical and biological reactions of organic and inorganic pollutants in soils.

464 Statistical Methods for Biologists I
Fall. 3(3-0) Interdepartmental with Statistics and Probability; Animal Science. Administered by Department of Statistics and Probability. RB: (STT 421)
Biological random variables. Estimation of population parameters. Testing hypotheses. Linear correlation and regression (prediction). Analyses of counted and measured data to compare several biological groups (contingency tables and analysis of variance).

465 Statistical Methods for Biologists II
Spring. 3(3-0) Interdepartmental with Statistics and Probability; Animal Science. Administered by Department of Statistics and Probability. RB: (STT 464)
Concepts of reducing experimental error: covariance, complete and incomplete block designs, latin squares, split plots, repeated-measures designs, regression applications, and response surface designs.

470 Soil Resources
Fall. 3(2-3) RB: (CSS 210) R: Not open to freshmen or sophomores. Evaluation of the properties, genesis, and classification of soil resources to assist in making land-use decisions. Field trips required.

477 Pest Management I: Pesticides in Management Systems
Fall. 3(3-0) Interdepartmental with Entomology; Fisheries and Wildlife; Horticulture. Administered by Department of Entomology. RB: (CEM 143 or CEM 251) and (BOT 405 and CSS 402) and (ENT 404 or ENT 470 or FW 328) Chemistry, efficient use, and environmental fate of pesticides. Legal and social aspects of pesticide use.

478 Pest Management II: Biological Components of Management Systems (W)
Spring of even years. 3(2-3) Interdepartmental with Entomology; Forestry; Fisheries and Wildlife; Horticulture. Administered by Department of Entomology. P:M: (ENT 404 or ENT 470 or PLP 405 or CSS 402 or FW 328) and completion of Tier I writing requirement. Principles of host plant resistance and biological control and their relationship to the design of agroecosystems. Classification of insect biological control agents.

486 Biotechnology in Agriculture: Applications and Ethical Issues
Fall of even years. 3(3-0) Interdepartmental with Horticulture; Forestry; Philosophy. Administered by Department of Horticulture. P:M: (BOT 105 or BS 111) RB: (CSS 350 or ZOL 341) R: Not open to freshmen or sophomores. Current and future roles of biotechnology in agriculture: scientific basis, applications. Environmental, social, and ethical concerns.

488 Agricultural Cropping Systems: Integration and Problem Solving
Spring. 3(2-2) P:M: (CSS 101 and CSS 210 and CSS 310) RB: (CSS 402 and CSS 430 and PLP 405 and ENT 404) Background/course work in crop production and management. R: Open only to seniors in the Crop and Soil Sciences major. Integration and synthesis of agronomic and related concepts in agricultural cropping systems. Problem solving and application of information.

490 Independent Study
Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course. P:M: (CSS 101 or CSS 210) R: Approval of department; application required. Individual work on field, laboratory, or library research problem of special interest to the student.

491 Special Topics
Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 6 credits in all enrollments for this course. P:M: (CSS 101 or CSS 210) RB: Topics from crop production, crop physiology, turfgrass management, organic soils, turfgrass soils, soil fertility, plant and soil relationships, genetics, biotechnology, environmental science, or sustainable agriculture.

492 Professional Development Seminar II
Fall. 1(0-2) P:M: (CSS 210 and CSS 272) and completion of Tier I writing requirement. R: Open only to seniors in the Department of Crop and Soil Sciences. Synthesis, integration and application of agronomic principles to current issues in agronomy via discussion and oral and written communication.
Theories of consumer behavior, production and role of government regulation. Benefit analysis, innovation, externalities, and the ing and management, such as discounting, cost-
course. Emphasis on topics of interest in engineer-
A combined microeconomics and macroeconomics

ECONOMICS

Department of Economics College of Social Science

201 Introduction to Microeconomics Fall, Spring, Summer. 3(0-9) R: Approval of department; application required. Faculty supervised research in a selected area of crop and soil sciences or environmental soil science.

202 Introduction to Macroeconomics Fall, Spring, Summer. 3(0-9) Not open to students with credit in EC 252H.

201T Introduction to Microeconomics Fall, Spring. 3(2-2) Not open to students with credit in EC 201 or EC 251H.

210 Economics Principles Using Calculus Fall. 3(3-0) P.M. (MTH 133 or MTH 153H or MTH 126) Not open to students with credit in EC 201 or EC 202.

A combined microeconomics and macroeconomics course. Emphasis on topics of interest in engineer-
ing and management, such as discounting, cost-
benefit analysis, innovation, externalities, and the role of government regulation.

251H Microeconomics and Public Policy Fall, Spring. 4(4-0) Not open to students with credit in EC 301.

Theories of consumer behavior, production and cost. Output and price determination in competition and monopolies. Welfare economics, general equi-

252H Macroeconomics and Public Policy Fall, Spring. 3(3-0) P.M. (EC 201 and EC 301) or (EC 251H) Not open to students with credit in EC 302.

Theory of national income, unemployment, inflation and economic growth and its application to econ-

293 Cooperative Education for Business Students Fall, Spring. 1(1-0) A student may earn a maximum of 3 credits in all enroll-
ments for this course. P.M: Completion of Tier I writing requirement.

Global food, soil and water resources issues.

301 Intermediate Microeconomics Fall, Spring, Summer. 3(3-0) P.M: (EC 201) RB: (EC 202) Not open to students with credit in EC 251H.

Theories of consumer choice, production, cost, perfect competition, and monopoly. Welfare eco-

302 Intermediate Macroeconomics Fall, Spring, Summer. 3(3-0) P.M: (EC 201 and EC 202) Not open to students with credit in EC 252H.

National income accounting. Determination of ag-
gregate output, employment, price level, and infla-

306 Comparative Economic Systems Fall. 3(0-9) P.M. (EC 201 or EC 251H) and (EC 202 or EC 252H)

Characteristics and functions of economic systems. Alternative patterns of economic control, planning, and market structure. Theories, philosophies, and experiences associated with capitalism, socialism, and mixed economies.

310 Economics of Developing Countries Spring. 3(3-0) P.M: (EC 201 or EC 251H)

Overview of economic patterns and policy issues of developing countries such as modern economic growth and structural transformation, state controls versus markets, poverty and human welfare, in-

320 Analysis of Economic Data Fall, Spring. 3(3-0) P.M: (EC 201 or EC 251H) and (EC 202 or EC 252H) R: Not open to students in the Department of Ac-
counting or Department of Finance or School of Hospitality Business or Department of Management or Department of Marketing and Supply Chain Management.

Sources of economic data. Techniques for present-
ing and summarizing economic data. Testing theo-

330 Money, Banking, and Financial Markets Fall, Spring, Summer. 3(3-0) P.M: (EC 201 or EC 251H) and (EC 202 or EC 252H)

Money markets and financial intermediation. Money, the Federal Reserve System, and monetary policy. Regulation of money markets.

335 Tax and Government Spending and Public Policy Fall, Spring, Summer. 3(3-0) Interdepart-
mental with Environmental Economics and Policy. P.M: (EC 201 or EC 251H) SA: PRM 335 Not open to students with credit in EC 435 or EC 436.

Economics of the public sector. Public goods, exter-

340 Survey of International Economics Fall, Spring, Summer. 3(3-0) P.M: (EC 201 or EC 251H) and (EC 202 or EC 252H) Not open to students with credit in EC 440 or EC 441.

Comparative advantage. Costs and benefits of trade. International economic policies. Balance of payments. Foreign exchange markets. The interna-
tional monetary system. Contemporary trade and international currency issues.

360 Private Enterprise and Public Policy Fall, Spring, Summer. 3(3-0) P.M: (EC 201 or EC 251H)

Effects of antitrust, economic regulation, and other public policies on competition, monopoly, and other market problems in the United States economy.

380 Labor Relations and Labor Market Policy Fall, Spring, Summer. 3(3-0) P.M: (EC 201 or EC 251H)

Development, functions, legal framework, and eco-
nomic effects of unions and collective bargaining. Institutions and economic impacts of government programs. Minimum wages, workers’ compensation, unemploy-
melment insurance, and antidiscrimination policies.

385 International Labor Market Policy and Labor Relations Fall. 3(3-0) P.M: (EC 201 or EC 251H) Not open to students with credit in EC 380.

Comparative treatment of labor policy and labor relations in the United States, Western Europe, Japan, Canada, and Australia. Analysis of how different policies affect wages, living standards, and economic efficiency. Labor markets and integration of national economies.

391 Special Topics in Economics Fall, Spring. 3(3-0) P.M: (EC 201 or EC 251H) and (EC 202 or EC 252H)

Special topics supplementing regular course offer-
ings.

401 Advanced Microeconomics Fall, Spring. 3(3-0) P.M: (EC 301 or EC 251H)

Economics of uncertainty and incomplete informa-
tion. Game theory and theories of oligopoly. Trans-
action costs. Advanced topics in welfare economics, general equilibrium, externalities, and public goods.

402 Advanced Macroeconomics Fall, Spring. 3(3-0) P.M: (EC 251H or EC 301) and (EC 252H or EC 302)

Consumption, investment, and monetary theories. The role of expectations. Theories of economic growth and cycles. Stabilization policies.