

412. Introductory Comparative Physiology
(310.) Fall. 4(3-4) 240 or B S 212 and CEM 132.

A comparison of osmoregulation, digestion, respiration, and other physiological processes in a wide range of organisms.

416. Physiology of the Cell
Fall. 3(3-0) CEM 242 or 353.

Physiologic mechanisms common to all living cells with emphasis on those of the vertebrates. The functions of the cell membrane and cytoplasm are studied as the basis for the physiologic behavior of vertebrate organs and systems.

417. Physiology of the Cell
Summer. 3(2-3) Approval of department.

Physiologic mechanisms common to all living cells with emphasis on those of the vertebrates. The functions of the cell membrane and cytoplasm are studied as the basis for the physiologic behavior of vertebrate organs and systems.

440. Avian Physiology
Spring of odd-numbered years. 4(3-3) Approval of department. Interdepartmental and administered jointly with the Poultry Science Department.

A survey of the systemic physiology of birds emphasizing digestion, metabolism, the endocrines, and reproduction.

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

Anatomy of mammary gland. Hormonal and nervous control of mammary growth, initiation and maintenance of lactation. Biochemistry of milk secretion. Physiology of milking; physiological, pathological and management factors affecting lactation.

445. Endocrinology and Reproduction of Farm Animals

Fall. 4(3-2) 240. Interdepartmental and administered jointly with the Dairy 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.

480. Special Problems
Fall, Winter, Spring, Summer. 1 to 5 credits. Approval of department.

501. Advanced Mammalian Physiology

Winter, Summer. 6(4-6) Approval of department.

Basic aspects of cellular physiology including the study of nerve and muscle cell function and the fluid and electrolyte environment of body tissues. Blood, heart and circulation, kidney function and respiration physiology.

502. Advanced Mammalian Physiology

Fall, Spring. 6(4-6) 501. A continuation of 501; with consideration of the digestive, central nervous and endocrine systems.

808. Advanced Endocrinology
Winter. 3(3-0) Approval of department.

Current developments on anatomy, physiology, chemistry, and regulation of the major endocrine glands; nervous and hormonal control of reproduction and lactation.

812. Advanced Comparative Physiology
Fall. 4(3-4) B S 212 or approval of department.

A study of organ function in a wide range of groups of animals with emphasis on evolutionary relationships and physiological basis of ecology.

815. Sensory Physiology
Winter. 3(2-2) Not open to students with credit in 323. Approval of department.

Physiology of sense organs for students in physiology, psychology and others.

819. Kidney Physiology and Electrolyte Metabolism
Spring. 3(3-0) 502.

Critical study of the literature on classical and contemporary principles of renal physiology and related aspects of body fluid and electrolyte metabolism.

835. Neurophysiology
Winter. 5(4-3) Approval of department.

Functions and properties of the peripheral and central nervous systems.

836. Physical Principles of Biological Systems
Spring. 3(3-0)

Application of laws and methods of physics to measurement and description of physiological phenomena.

837. Radiobiology
(430). Winter. 3(3-0) Approval of department.

Application of radioactive tracer techniques to study of biological functions. Determination of turnover rates and tissue constituents by isotope dilution. Control of radiation hazards.

859. Analysis of Hormone Action
Spring. 4(4-0) ZOL 317, or approval of department. Interdepartmental with and administered by the Zoology Department.

Discussion of recent work on the molecular and developmental aspects of hormone action in vertebrates and invertebrates. Selected topics to vary from year to year.

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

910. Seminar
Fall, Winter, Spring, Summer. 1(1-0) May re-enroll for a maximum of 2 credits for the Master's program and a maximum of 4 additional credits for either the Ph.D. or the diploma program.

915. Respiratory Physiology
Spring. 4(3-2) 502, approval of department.

Development of ideas leading to our present state of knowledge in respiration.

919. Cardiovascular System
Fall. 4(3-3) 502.

Outstanding literature on physiology of heart, blood vessels and lymphatics, hemodynamics, cardiac output and circulation in special regions. Appropriate methodology discussed. Laboratory work illustrates principles of special procedures.

950. Topics in Physiology
Fall, Winter, Spring, Summer. 1 to 3 credits. May re-enroll for a maximum of 9 credits. Approval of department.

Classical and modern concepts in selected areas of physiology.

980. Problems
Fall, Winter, Spring, Summer. 1 to 3 credits. May re-enroll for a maximum of 9 credits. Approval of department.

Limited amounts of individual work on selected research problems.

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

POLICE ADMINISTRATION AND PUBLIC SAFETY PLA

College of Social Science

110. Introduction to Criminal Justice
Fall, Winter, Spring. 5(4-0)

Agencies and processes involved in the administration of criminal justice—the legislature, the police, the prosecutor, the courts and corrections. Problems of law enforcement in a democratic society.

130. Administrative Concepts in Law Enforcement and Public Safety
Winter, Spring. 5(3-4)

Exposition of those basic principles and practices of administration which apply to law enforcement and public safety. Theoretical and practical aspects of management factors such as organization, decision making, human relations and power.

225. Police Science Laboratory I
Fall, Winter, Spring. 4(0-8)

General course in laboratory techniques. Photography, recording of a crime scene, collection and preservation of evidence, and fingerprinting.

235. Police Administration I
Fall. 5(4-1)

Principles of police administration and organization; administration of staff units; function and activities of police agencies.

236. Police Administration II
Winter. 5(4-1)

Administration of police line operations; including patrol as the basic police function, investigation, juvenile, traffic and special operational units. Liaison between units, enforcement policy, manpower distribution, and analysis of operations.

245. Highway Traffic Administration I
Fall. 5(5-0)

Examination of United States transportation system, emphasizing efficient, safe operation. Activities and agencies concerned with increasing efficiency. System's development; components; social, economic and political impacts. Survey of present and future needs.

246. Highway Traffic Administration II
Winter. 5(4-0)

Organization for traffic control, accident investigation, traffic flow regulation, and accident analysis and interpretation. Survey of traffic law, as related to administration. Violation bureau and traffic court administration.

247. Highway Traffic Administration III
Spring. 5(4-0)

Highway traffic education at the elementary, secondary and adult levels of instruction. Communication aspects of highway traffic administration. Public support organizations. Motor vehicle fleet safety programs. Traffic safety research.

275. Criminal Law
Fall, Winter, Spring. 5(4-0)

Survey of substantive criminal law as a means of attaining certain socially desirable ends like the preservation and protection of life and property; emphasis on historical and philosophical concepts.

318. The Police and Community Relations
Fall, Winter, Spring. 4(4-0)

Interdisciplinary survey of the field of police and community relations, emphasizing police administrative responsibility, with special attention to police role in community relations tension and conflict.

325. Criminal Investigation
Fall, Winter. 5(5-0)

Introduction to criminal investigation procedures including theory of an investigation, conduct at crime scenes, collection and preservation of physical evidence; methods used in police science laboratory; fingerprints, ballistics, documents, serology, photography, and related forensic sciences.

327. Police Science Laboratory II
Winter. 3(0-6) 225 or approval of school.

Continuation of 225, including the studies of firearms, hair, microscopy and chemistry.

328. Police Science Laboratory III
Spring. 3(0-6) 327 or approval of school.

Continuation of 327, including serological examination of minute pieces of evidence, documents, and instrumental analysis.

355. Delinquency Prevention and Control
Fall, Spring. 5(4-1)

Problem of juvenile delinquency, theories of causation and prevention programs. Police prevention programs, juvenile courts, institutional treatment, community resources for prevention, federal and state programs.

356. Organization and Administration of Delinquency Prevention Programs
Winter. 5(4-1)

Prevention programs in general. Police prevention programs—historical development, present status, organization and administration areas of operation, personnel, training, relationship to other agencies. Application of organizational scheme to other agencies.

368. Correctional Philosophy, Theory and Practice
Fall, Winter. 5(4-1)

Introductory survey of philosophy, theory and practice involved in the treatment of convicted law violators of all ages. Appraisal of the impact of correctional treatment upon post-correctional behavior.

369. Probation and Parole
Spring. 5(4-1) 110, 355, 368; or approval of school.

Treatment of convicted law violators by the correctional field services before and after prison. The role of probation and parole counselors. Appraisal of effectiveness. Prediction of behavior during and after probation and parole.

380. Industrial Security Administration
Fall. 5(4-1)

The organization and management of industrial security units including government security. The protection of commercial and industrial manpower, facilities, and installations. Security and police operations. Administrative, legal and technical problems. Specialized programs for factories, railroads, retail stores, insurance companies, credit bureaus, etc.

381. Industrial Fire Protection, Disaster Control, and Defense Programs
Spring. 4(3-0)

The administration of fire and accident prevention programs. Development of policy, rules and regulations. Operations for fire and accident control. Equipment facilities, inspections, investigations, and records. Special problems and hazards.

400H. Honors Work
Fall, Winter, Spring, Summer. Variable credit. Approval of school.

Open only to qualified students. Individually selected program of supervised group or individual study dealing with some phase of police administration and public safety.

401. Case Studies in Law Enforcement and Public Safety
Fall, Winter, Spring, Summer. 1 to 6 credits. May re-enroll for credit. Majors.

Surveys and applied research as approved by students' major professor.

409. Special Issues in Criminal Justice
Fall, Winter, Spring, Summer. Variable. May re-enroll for a maximum of 4 credits. Majors: 110, others: approval of school.

Forum for special course offerings focusing on special issues in criminal justice by visiting instructors or regular faculty.

453. Case Analysis in Prevention Programs
Spring. 5(4-1)

Factors to be considered in determination of referral action for delinquent youth. Estimating significance of behavior and home situation. The referral process, selection of agency, preparation for referral, follow-up.

465. Administration of Correctional Institutions
Fall. 5(4-1) 110, 355, 368; or approval of school.

Treatment, security, custody and discipline of the convicted law violator in correctional institutions. Social structure of the prison community; inmate social systems and interaction. Correctional clinic records. Correctional research and decision making.

471. Criminal Procedure
Fall, Spring. 4(4-0)

Study of the constitutional right of the people to be secure from unreasonable searches and seizures; how rules of evidence safeguard individual rights in the administration of criminal justice.

480. Internal Security in a Democracy
Winter. 3(3-0) or 5(3-0)

Approaches to the control of "subversive activities" and their effectiveness from the standpoint of security and freedoms essential in a democracy.

490. Criminal Justice Practicum
Fall, Winter, Spring, Summer. Variable credit. May re-enroll for a maximum of 12 credits. Approval of school.

Planned program of research, observation, study, and work in selected criminal justice agencies. Designed to supplement classroom study with constructive participation in the criminal justice system of communities of the United States and foreign nations.

492. Methods of Criminal Justice Research
Fall, Spring. 4(3-2)

Elements of scientific perspective; interaction of research and theory. Introduction to research design, data collection, analytic and statistical techniques, use of data processing resources, and preparation of research reports.

493. Problems and Techniques of Criminal Justice Research
Winter. 4(3-2) 492 or approval of school.

Continuation of 492 to provide depth in the various elements of research; extension to more sophisticated research models, and the relevance of findings for criminal justice program innovation and evaluation.

499. Seminar in Criminal Justice
Fall, Winter, Spring, Summer. 5(3-0) Seniors.

Discussion and evaluation of criminal justice policies and practices. Preparation of undergraduate senior research paper.

801. Directed Studies
Fall, Winter, Spring, Summer. 1(0-2) to 6(0-12) Approval of school.

Individual research and study in student's field of interest as approved and directed by major professor.

802. Advanced Security Administration
Fall 3(3-0) or 5(3-0) Approval of school.

Salient problems and issues of concern to professional security administrators with emphasis on business management approaches. Typical problem areas include: contractual security services; employee dishonesty; cost considerations; work simplification.

812. Advanced Law Enforcement and Public Safety Administration
Fall. 3(3-0) or 5(3-0) Approval of school.

Framework through which the objectives of the process of social control (criminal justice) are obtained. The administrative, political and social milieu in which this machinery operates.

815. Seminar in Criminal Investigation
Spring. 3(3-0) or 5(3-0) 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.

820. Advanced Police Administration
Winter. 3(3-0) or 5(3-0) Approval of school.

Depth analysis of the line and staff functions within a law enforcement agency. Problems of program development, execution, and evaluation.

822. Comparative Law Enforcement Administration
Spring. 3(3-0) or 5(3-0) Approval of school.

Comparative study of police organization and administration in various governmental and social systems. Evaluation of government's role, its limitations, the selection and training of leaders.

823. Community Relations in the Administration of Justice
Fall. 4(4-0) or 5(4-0) Approval of school.

Seminar in the field of community relations, encompassing the spectrum of the administration of justice and community responsibility, utilizing the inter-disciplinary approval in case and situational analysis.

840. Seminar in Highway Traffic Administration
Winter. 3(3-0) or 5(3-0) Approval of school.

Traffic problems in their broad social setting. Inventory and critical review of the traffic safety movement and role of various professions therein. Future problems and developments.

868. Review and Evaluation of Correctional Research
Winter. 3(3-0) or 5(3-0) Approval of school.

Correctional research systems review, analysis and critical evaluation of correctional research findings and conclusions pertaining to correctional decision making in the treatment process.

870. Administration of Criminal Law
Winter. 3(3-0) or 5(3-0) Approval of school.

Major provisions of the Constitution of the United States that safeguard personal liberties. Judicial processes are examined in the light of historical experience, and social change.

875. Seminar in Deviant Behavior
Spring. 3(3-0) or 5(3-0) Approval of school.

Evaluation of current major hypotheses, review of recent developments, contributions by agencies and academic institutions and review of current literature in the field of deviant behavior.

890. Field Training
Fall, Winter, Spring, Summer. 1(0-4) to 6(0-24) Approval of school.

Field service training provided with federal, state, and local enforcement agencies; crime laboratories; commercial, industrial, and financial organizations with security programs; agencies working in crime and delinquency prevention; correctional agencies; and organizations engaged in highway safety.

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

290. Methods of Political Research
Fall, Winter. 4(3-0)

Design and execution of research in political behavior and institutions. Major emphasis on logic underlying various types of political research, on identification of appropriate data sources and field methods.

291. Methods of Political Research
Winter, Spring. 4(3-0) 290.

Analysis of political data, with major emphasis on quantitative techniques.

301. American State Government
Fall, Winter, Spring, Summer. 4(3-0) Sophomores.

Major aspects of policy-making process at the state government level. Comparison of state political systems.

302. American Urban Government
Fall, Winter, Spring, Summer. 4(3-0) Sophomores.

Urban political process in America. Politics of policy-making for urban functions; politics of intergovernmental relations.

303. Michigan Government
(401.) Spring. 4(3-0) 200 or Juniors.

How Michigan government is organized and conducted and how policies are made; sources of executive-legislative conflict; politics of taxation; role of the state in local affairs; balance of political forces in the state.

310. Public Bureaucracy in the Policy Process
Fall, Spring. 4(3-0) 200.

Introduces student to following major areas of public administration: development of administration in the U.S.; theories of administrative organization; principles and methods of administrative management; executive leadership; interpersonal and intergroup relationships; levels of decision making, ethics and responsibility.

313. Process of Public Administration
Winter, Summer. 4(3-0) 310.

Intensive analysis of administrative decision making and policy formation. The impact of interest groups on the administrative process. Examination of the interrelationships between politics, administration and planning.

320. The American Judicial Process
Fall, Winter, Spring, Summer. 4(3-0) Juniors.

Analysis of the structure and functions of judicial systems. Organization, administration, and politics of judicial bureaucracies. Roles of judges, juries, counsel, litigants, and interest groups in adjudication processes.

321. Constitutional Politics
Winter, Spring. 4(3-0) Juniors.

The political behavior of Supreme Court justices and their policy making. Focus on Court's role in formulating national economic policy and in interrelationships among the national, state, and local governments.

322. Constitutional Politics
Spring, Summer. 4(3-0) Juniors.

Continuation of 321, with focus on public policy pertaining to civil rights and liberties, political freedom and social equality.

324. The American Legislative Process
(424.) Winter. 4(3-0) 200 or Juniors.

Nature of legislative process in the United States; organization and procedure of legislative bodies; direct legislation; relationship of legislative branch to other branches of government.

325. The American Executive Process
(425.) Spring. 4(3-0) 200 or Juniors.

Role of the president, state governors, and municipal executives in the American system of government. Analysis and discussion of constitutional status and powers, selection, administrative responsibilities, legislative and political leadership, accountability and responsibility of chief executives.

331. American Political Parties and Elections
Fall. 4(3-0) Four credits in political science or Juniors.

Origins, structure, and functions of political parties. Dynamics of the two-party system. Role of third parties. Nominating process, political campaigns, and the analysis of election results.

332. Interest Groups and Political Movements
Winter. 4(3-0) Four credits in political science or Juniors.

Group theory and politics. Growth of organizations and associations to represent the interests of business, labor, agricultural, professional, veterans, and other groups. Internal politics of private associations and their impact on public policy.

333. Political Opinion and Public Policy
Spring. 4(3-0) Four credits in political science or Juniors.

Formation of political attitudes: the mass media of communication as sources of political opinion and propaganda and the impact of political opinion and propaganda upon the formation of public policy.

335. Comparative Parties and Pressure Groups
(451.) Spring. 4(3-0) Four credits in political science or Juniors.

Dynamics of political party and pressure group behavior in selected political systems. Comparative analysis of organization, ideologies, membership, leadership, tactics, power and influence of parties.

336. Black Political Movements
Fall. 4(3-0)

Examines attempts of blacks to gain political access and identity in America from post civil war through black nationalism. Treated as a case study of the politics of social movements.

340. Theories of Comparative Politics
Fall, Winter, Spring. 4(3-0) Four credits in political science or Juniors.

Alternative methods for comparative cross-cultural analyses of political systems. Political structures, functions, cultures, stability and change. The problem of equivalence.

344. The Politics of Developing Areas
(452.) Spring. 4(3-0) Four credits in political science or Juniors.

Process of political growth in emergent societies of the world; stresses of change and flux resulting from economic development in relation to the structure and dynamism of government.

345. Political Institutions and Behavior in South Asia
Winter of odd-numbered years. 4(3-0) 340 or approval of department.

Political ideas and institutions in India, Pakistan, and related territories; analysis of constitutional development, political parties, legislatures, administration, planning, foreign policy and their interaction with the social system.

POLITICAL SCIENCE PLS

College of Social Science

100. American National Government
(300.) Fall, Winter, Spring, Summer. 4(3-0) Not open to majors.

Major aspects of national government with emphasis on the policy-making process.

160. International Relations
(260.) Fall, Winter, Spring, Summer. 4(3-0)

Contemporary world affairs surveyed. The struggle for power, the nation-state system; factors creating harmony and hostility among nations. War and peace in our time.

170. The Isms
Fall, Winter, Spring, Summer. 4(3-0)

Introduction to basic contemporary political ideologies; theoretical foundations of democracy, socialism, communism, political elitism, and nationalism. Special attention to ideology underlying contemporary political problems.

200. Introduction to Political Science
Fall, Winter, Spring, Summer. 4(3-0)

Acquaints the student with the theories, methods and concepts of political science. Emphasis is on ideology and interests in the political process.

201. Introduction to Political Science
Fall, Winter, Spring, Summer. 4(3-0)

Continuation of 200. Emphasis on function of institutions in political systems and individual motivation and behavior in the political process.