

**371 Intermediate Laboratory (Electrons) (2)**

Prereq: 254 or 352. Fundamental experiments on electron properties including charge and mass, wave properties, atomic binding, spin, and conduction. 4 lab.

**372 Intermediate Laboratory (Photons) (2)**

Prereq: 254 or 352. (winter) Experiments in optics, lasers, X-rays and spectroscopy. 4 lab.

**373 Intermediate Laboratory (Nucleons) (2)**

Prereq: 254 or 352. (spring) Nuclear decay modes and  $\alpha$ ,  $\beta$ ,  $\gamma$ -decay spectroscopy. Nuclear reactions and scattering. Principles of operation of  $\alpha$ ,  $\beta$ ,  $\gamma$  and neutron detectors and data acquisition systems. 4 lab.

**397T Physics Tutorial (1–15)**

Prereq: Honors Tutorial College students only. (fall) 2nd-yr tutorial studies in physics.

**398T Physics Tutorial (1–15)**

Prereq: Honors Tutorial College students only. (winter) 2nd-yr tutorial studies in physics.

**399T Physics Tutorial (1–15)**

Prereq: Honors Tutorial College students only. (spring) 2nd-yr tutorial studies in physics.

**411 Thermodynamics (4)**

Prereq: 253, MATH 340. (fall) 1st and 2nd laws of thermodynamics, phase changes and entropy. Temperature, thermodynamic variables, equations of state, heat engine. 3 lec, 1 rec.

**412 Kinetic Theory and Statistical Mechanics (4)**

Prereq: 411. (winter) Kinetic theory, transport phenomena of gases, and introduction to classical and quantum statistics. 3 lec, 1 rec.

**414 Dynamic Meteorology I (4)**

Prereq: 411, MATH 340, 440, 441. Basic conservation laws, elementary fluid dynamics, circulation and vorticity. Mathematics related to coordinate systems related to meteorology, thermodynamics of the atmosphere.

**415 Dynamic Meteorology II (4)**

Prereq: 414. Continuation of 414. Energy balance in the atmosphere, thermal physics of the atmosphere. Synoptic scale motions, atmospheric oscillations, baroclinic instabilities, mesoscale circulation, numerical methods. Special topics in dynamical meteorology.

**420 Acoustics (3)**

Prereq: 312, MATH 340, or perm. (spring, odd yrs) Vibration, sound radiation, sound propagation, and practical aspects of sound. 3 lec.

**423 Geometrical and Physical Optics (4)**

Prereq: 253, MATH 441, or perm. Reflection, refraction, diffraction, lenses, polarization, birefringence, interference, coherence, and selected introductory topics in modern optics. 4 lec.

**427 Electricity and Magnetism (4)**

Prereq: 253, MATH 340 and 440. (fall) Circuits and electric and magnetic fields. Topics on field sources, potentials, Gauss' law, polarization and dielectrics, magnetic induction. 3 lec, 1 rec.

**428 Electricity and Magnetism (4)**

Prereq: 427. (winter) Electric and magnetic fields. Topics on magnetic potentials, magnetic forces, Faraday law, magnetic materials, capacitance and inductance, energy of charge and current distributions, time-varying current. 3 lec, 1 rec.

**429 Electromagnetism and Relativity (3)**

Prereq: 428. (spring) Advanced topics in electromagnetism; Maxwell's equations and electromagnetic waves; special relativity and Lorentz transformation. 3 lec.

**431 Electronics Laboratory (3)**

Prereq: perm. Experiments in electronic measurement techniques from simple A.C. and digital circuits to microprocessors and analyzers. 6 lab.

**451 Quantum Mechanics (4)**

Prereq: 254 or 352, MATH 441 or perm. Classical background, early work, some observables and Hermitian operators, representations, symmetry and conservation laws, One-dimensional Schrodinger equation solutions in the position and momentum representation. Some problems in two dimensions. Philosophical issues and quantum paradoxes. 4 lec.

**453 Nuclear and Particle Physics (4)**

Prereq: 254. (spring) Descriptive treatment of nuclear phenomena. Elementary theory of nucleon-nucleon interaction. Systematics of nuclear structure (shell model and collective model). Properties and interactions of fundamental particles. Devices and techniques of nuclear and high energy physics. 3 lec, 1 rec.

**461 Cell and Molecular Biophysics (4)**

Prereq: 253, CHEM 152, BIOS 170. Introduction to the physical principles that underlie phenomena in cell biology and the properties of biomolecules. Topics covered will include an introduction to molecular biology, bioreology, Brownian motion, molecular interaction in macromolecules, protein and nucleic acid structure, physics of biopolymers, chemical kinetics, mechanical and adhesive properties of biomolecules, molecular manipulation techniques, cell membrane structure, membrane channels and pumps, and molecular motors. 4 lec.

**470 Special Problems (1–4)**

Prereq: 22 hrs. Supervised research problems of limited scope in experimental and theoretical physics.

**471 Solid State Physics (4)**

Prereq: (254 or 352) and 412. (spring, even yrs) Fundamental properties of solid state of matter. 3 lec, 1 rec.

**475 Advanced Laboratory (1 hr per sec, max 3)**

Prereq: 373 or perm. Wide selection of experiments from many areas of physics. Limit of 2 students per section. Student may select up to 3 different sections each qtr.

**477 Electronic Device Physics (4)**

Prereq: 253. Physical principles of electronic devices. Overview of electronic transport in solids with application to diodes, bipolar transistors, and field-effect transistors. Heterostructures and low-dimensional physics and devices. Selected condensed matter phenomena with electronic device applications: resonant tunneling, Landauer formalism, single-electron physics, molecular electronics and spintronics. 4 lec.

**490H Honors Thesis (1–6)**

Prereq: Departmental honors candidates only; perm of director of honors studies. Supervised research work in physics, astronomy, or engineering physics, intended for submission for undergrad honors.

**493 Undergraduate Seminar (1)**

Prereq: jr. Important areas of current interest in field of physics, history of physics, development of ideas in physics, and other aspects of physics.

**497T Physics Tutorial (1–15)**

Prereq: Honors Tutorial College students only. (fall) 3rd- and 4th yr tutorial studies in physics.

**498T Physics Tutorial (1–15)**

Prereq: Honors Tutorial College students only. (winter) 3rd- and 4th yr tutorial studies in physics.

**499T Physics Tutorial (1–15)**

Prereq: Honors Tutorial College students only. (spring) 3rd- and 4th yr tutorial studies in physics.

**Political Communication (POCO)****201 Introduction to Political Communication (3)**

Overview of the realm of political communication, the interactions among political figures, political interests, the press, and the public. Against the background of the American political process, an investigation of those involved in that process, their relationships, and the role of mass and interpersonal communication in these relationships.

**401 Seminar in Political Communication (5)**

Prereq: 201 and completion of a min. of four courses from the program, and perm. A senior-level research course investigating selected aspects of political communication.

**Political Science (POLS)****101 American National Government (4) (25)**

Constitutional basis and development, political processes, institutions, and organization of American national government.

**102 Issues in American Politics (4) (25)**

Concerned with administration and policy-making processes of national government in selected areas, e.g., welfare, civil rights, defense, etc.

**103 The United States in World Affairs (4) (25)**

Introduction to major foreign policy problems confronting successive U.S. administrations in world affairs.

**150 Current World Problems (4) (25)**

Examines a number of the major political crises, problems, and issues confronting the contemporary world.

**210 Principles of Public Administration (4) (25)**

Introduction to role and operation of public agencies in American society. Examines organization of federal, state, and local bureaucratic systems, their interrelations, and their basic principles, functions, and tasks.

**230 Comparative Politics (4) (25)**

Introduction to dynamics, structures, and comparison of contemporary political systems and processes.

**250 International Relations (4) (25)**

Contemporary international system and major forces and conditions which affect current international politics. Special emphasis on role of conflict and need for peaceful conflict resolution.

**270 Political Theory (4) (25)**

Introduction to study of political theory: examination of selected political issues and theorists from philosophical perspective. Emphasis on developing one's own political values and theories.

**301 The Politics of Law (5)**

Prereq: 101. Introduces the study of law as a political process with special emphasis on courts, legal ideologies, violence, and the mobilization of rights claims in social and political conflict.

**304 State Politics (4)**

Prereq: 101, 102. Comparative analysis of state political systems. Emphasis on structure and process of policy making of states within federal context.

**305J Writing on Political Science Topics (4) (1J)**

Prereq: jr, majors only. Writing course for political science majors. Focus is on studying and producing clear and persuasive writing about political issues.

**306 Politics of Appalachia (5)**

Prereq: 101 or perm. Introduction to Appalachia, its political patterns, and political problems such as politics of poverty and powerlessness. Includes examination of responses to these problems by various levels of government—national, regional, state, and local.

**310 American Domestic Policy (4)**

Prereq: 101, 102, or perm. Major issues in American domestic policy are discussed from a variety of perspectives. The origin, development, and current structures of economic and social policy will be discussed. An analysis of these policies from a free market as well as a Marxist perspective will be provided.

**319 Gay and Lesbian Politics (4)**

Prereq: soph. Exploration of emergence and ramifications of gay political activism in Western culture. Homosexuality is examined from vantage points of religion, psychology, law, and politics.

**320 Urban Politics (4)**

Prereq: 101, 102, or perm. Examination of role of values in urban politics focusing on their relationship to urban problems, structure and functions of municipalities, urban professionalism, and alternative urban arrangements.

**323 Black Politics in the United States (4)**

Prereq: 101 and 102 or perm. Appraisal of economic and institutional structure of American

society through social doctrines, enunciated by black political theorists, that serve as inspiration and ideology for black political movements. Examines sociopolitical societies in various parts of Africa and interprets black political movements in cultural, philosophical, ideological, and technological terms. Not open to those who have had AAS 323.

**331 Politics in Western Europe (4) (2S)**  
Government and politics in several West European nations.

**333 Politics in Russia and Former Soviet Union (4)**  
Introduction to political development, ideology, institutions, and contemporary politics of the former U.S.S.R.

**340 The Politics of Developing Areas (4) (2C)**

Major theories and problems of political, sociocultural, and economic development in new states of Asia, Africa, and Latin America, with special emphasis on heritage of colonialism, struggle for independence, and political adjustments to rapid social and technological change.

**342 East Asia in World Politics (4)**

Prereq: 230 or 250 or perm. Examines the evolution of East Asia in world politics in the postwar era, including both the historical antecedents and alternative theoretical perspectives, as well as a variety of contemporary political, economic, and security issues related to this region.

**354 American Foreign Policy (4)**

Prereq: 103 or perm. Consideration of problems involved in formulation and execution of foreign policy. Particular emphasis on contemporary problems of American policy makers.

**371 Plato, Aristotle, and Pre-Modern Political Thought (4)**

Prereq: not open to fr. Major figures and basic concepts characteristic of political thought in ancient and medieval periods. Emphasis on original works of Plato, Aristotle, St. Augustine, St. Aquinas and on developing one's own political values and theories.

**372 Modern Political Thought (4)**

Prereq: not open to fr. Basic philosophical conceptions of modern nation state. Utilizing original works, evolution of nation state traced through philosophical literature from its Renaissance origins. Attention focused on both formative and critical perspectives, such as those of Machiavelli, Rousseau, and Emma Goldman with emphasis upon evaluation of norms associated with modern state.

**373 Contemporary Political Thought (4)**

Prereq: not open to fr. 19th- and 20th-century political theory. Focus on such contemporary philosophical and political issues as emergence of European socialist tradition, origins of human aggression, and human alienation. Attention given to selected theorists such as Marx, Freud, Gandhi, M. Friedman, and M. Harrington.

**390 Political Workshop (10-15)**

Prereq: 101 and perm. (fall, even years) Intensive analysis of political organizations and campaigning combined with field experience in campaigning.

**401 American Constitutional Law (4)**

Prereq: 16 hrs POLS, including 301. Analyzes the politics of American constitutional law with special focus on judicial review, economics, race, and gender.

**402 American Constitutional Law (4)**

Prereq: 16 hrs POLS, including 301. Analyzes the politics of American constitutional law with special focus on abortion, censorship, and surveillance.

**404 Civil Liberties (4)**

Prereq: 270 and 401 or 402. Examination of selected civil liberties issues such as freedom of expression, human and political equality, rights of criminally accused, and rights of indigent.

**405 American Political Parties (4)**

Prereq: 11 hrs POLS. Origin, growth, organization, and methods of parties; suffrage, nominations, and elections; role of parties in democracy.

**406 Elections and Campaigns (4)**

Prereq: 101. Examines nature of voter and rationality of voter decisions; impact of campaigns and

their influence on election outcomes; techniques used in political campaigns; and role of elections in American society.

**407 Politics of Urban Development (4)**

Prereq: 320. Focuses on the causes and consequences of economic development politics and policies in urban America and the multiple facets of urban development.

**408 Urban Public Administration (4)**

Prereq: 320 or perm. Examines administration of urban programs. Focuses on agency-client relationships, professionalism, and public delivery.

**409 Criminal Procedure (5)**

Prereq: 11 hrs POLS or perm. Role, function, and problems of American judicial, prosecutory, policing, and correctional systems in political process. Crime and law as functions of social and political systems. Examination of relationship of law and social change in industrialized, urbanized, and technical society.

**410 Public Policy Analysis (4)**

Prereq: 12 hrs POLS, including 102. Analysis of policy process; formulation, implementation, and evaluation. Examines policy areas such as energy, health, economic development.

**412 Public Personnel Administration (4)**

Prereq: 11 hrs POLS. Philosophy, problems, and procedures of public personnel management: recruitment, training, promotion policies, position classification, and employer-employee relations.

**413 Administrative Law (4)**

Prereq: 11 hrs POLS. Organization, functions, and procedures of selected national regulatory agencies; principles affecting administrative discretion, administrative power over private rights, enforcement, and judicial control of administrative decisions. No credit if BUSL 475.

**414 Organizational Theory and Politics (4)**

Prereq: 210. Examination of public organizations. Presents major theories of organizations in public administration.

**415 The American Presidency (4)**

Prereq: 11 hrs POLS. Analysis of office of national chief executive and its place in American political system. Attention given to constitutional status and powers, functional development, and interrelationship of person and office.

**416 Legislative Processes (5)**

Prereq: 11 hrs POLS. Explores legislative process and policy, primarily at national level. Examines influence of interest groups, constituencies, political parties, executive branch, and organizational structure of Congress on legislative outcomes.

**418 Interest Groups in American Politics (4)**

Prereq: 11 hrs POLS. Organization and tactics of pressure groups and their impact on policy-making process.

**420 Women, Law, and Politics (4)**

Prereq: jr or perm. Focuses on political and legal position of women in U.S. Covers women's legal status, feminist movement, current issues, and public policy responses concerning women's position such as Equal Rights Amendment, marriage and divorce laws, affirmative action, abortion, and pay equity.

**421 The Politics of Law and Sexuality**

An exploration of the regulation of sexuality in the U.S. from legal and theoretical perspectives. Cases and other materials will address a variety of issues including the right to privacy, pornography, the right to marry, and gays in the military.

**422 Political Elites and Leaders**

Exploration of the phenomenon of elites and leadership in global perspective, including contemporary Asia, Africa, and Latin America.

**424 Intergovernmental Relations in the U.S. (4)**

Prereq: 210 or perm. Examines intergovernmental fiscal patterns between federal-state-local governments and impact of fiscal transfers on local budgeting and finance administration. Includes analysis of nonfiscal patterns such as federal program requirements, their impact on local administrative processes, and other pressures on local budgeting and finance.

**425 Environmental and Natural Resource Politics and Policy (4)**

Examines the institutional context and political dynamics of environmental and natural resource policy making in the United States. Topics include history of the U.S. environmental movement, major players and arenas of influence in environmental politics, and current policy issues including public lands, endangered species, solid and hazardous waste, and air pollution.

**426 Politics of Contemporary Environmental Movement (4)**

Examines the major segments of contemporary U.S. environmental movement. Topics include the professionalization, activities, strategies, and criticisms of the mainstream environmental groups; radical environmentalism; grassroots environmentalism and gender; environmental justice and race.

**427 Formulation of American Foreign Policy (4)**

Prereq: 103 or 354 or perm. Covers institutional and administrative as well as political and more informal processes whereby foreign policy decisions are formulated and implemented in U.S.

**429 Comparative Public Administration (4)**

Prereq: 210 or 230 or perm. Examines and compares characteristics of public administrative systems in various national political settings.

**431 Politics of Eastern Europe (4)**

Discussion of recent political shifts in Eastern Europe, from Communism through current revolutions/transitions. Special focus on construction of democratic institutions, economics reforms, post-communist justice, and ethnic politics.

**432 Policy Making in Russia (4)**

Prereq: 11 hrs POLS, including 333 or course in Soviet history or perm. Examination of how Russian leadership deals with number of major domestic problems.

**433 Russian Foreign Policy (4)**

Prereq: 11 hrs POLS, including 333 or perm. Analysis of foreign policies of the former U.S.S.R. Historical, ideological, strategic, and other influences covered.

**434 Government and Politics of Latin America (4)**

Prereq: jr or sr. Political systems of Latin America. Emphasis on power relationships and political obstacles to change in contemporary Latin America.

**435 Revolution in Latin America (4)**

Prereq: jr or sr. Revolution as theoretical concept and as practical reality in several Latin American countries. Special emphasis on Cuban and Nicaraguan revolutions.

**438 Government and Politics of Germany (4)**

Prereq: 11 hrs POLS or perm. Major political processes, personalities, and institutions of contemporary West Germany, including key foreign policy issues.

**439 Politics in France (4)**

Prereq: 11 hrs POLS or perm. Major political processes, personalities, ideas, and institutions of modern France.

**441 African Politics (4)**

Prereq: 8 hrs POLS or history. Development and structure of modern African states with emphasis on political processes in tropical Africa.

**442 Middle East Politics (4)**

Prereq: 12 hrs POLS including 230. Examination of the major issues and dilemmas in contemporary Middle Eastern politics including the clash of religions and nationalisms, security and stability in the Persian Gulf, the Arab-Israeli conflict, efforts at democratization, and the status of women.

**445 Government and Politics of Japan (4)**

Prereq: 11 hrs POLS or Asian history. Political institutions and processes of Japan with emphasis on developments since 1945.

**446 Government and Politics of China (4)**

Prereq: 11 hrs POLS or Asian history. Political institutions and processes and major political developments in modern China.

**447A Government and Politics of Southeast Asia (4)**

Prereq: 11 hrs POLS or history. Introduction to the political institutions and processes of contemporary Southeast Asia.

**447B Government and Politics of Southeast Asia (4)**

Prereq: 11 hrs POLS or history. Continuation of 447A but can be taken independently. More in-depth study of politics in selected countries of Southeast Asia.

**449 Nationalism and Ethnic Conflict (4)**

Examines the nature of nationalism and its sources. Considers the nature of state boundaries and the political contention that can lead to violence based on national identity. Explores the means to resolve or prevent such conflicts.

**450H Honors in Political Science (5, max 20)**

Prereq: acceptance in departmental honors program. Seminar on selected topics in political science and preparation and research for writing an honors thesis.

**452 Advanced International Relations (4)**

Prereq: 250 or perm. In-depth analysis of various aspects of international relations including major theoretical approaches to study of international relations.

**455 International Law (4)**

Prereq: 250 or perm. Role of international law in interstate relations and international organization.

**456 International Organizations (4)**

Prereq: 250. Analysis of nature, development, structure, and functions of international organizations with particular emphasis on United Nations.

**457 National Security in the Post-Cold War World (4)**

Prereq: 12 hrs POLS including 250. Introduction to the concepts and problems of attaining international security in an ever-changing world. Overview of the traditional and new sources of state insecurity and consequences of the quest by nations to attain security in the international system.

**459 Arms Control and Disarmament (4)**

Prereq: 11 hrs POLS or perm. Examines military force in nuclear age with special emphasis on strategy of nuclear deterrence; history of disarmament negotiations since WWII; arms control agreements; and case studies in current U.S.–Russian arms control negotiations.

**460 International Political Economy (4)**

This course examines the politics of the world economy. Topics covered include the politics of international trade, the politics of the international monetary system, and international cooperation.

**463 The United States and Africa (5)**

Prereq: 103 or 250 or 354. Origins and nature of American relations with African states, with emphasis on current American interests and policy.

**468 Nonprofit Fundraising (4)**

Prereq: jr. An introduction to the tradition of philanthropy and fundraising in the United States. Examines practical, moral, and legal issues involving fund development and the fundraising profession. Provides students with an opportunity to apply fundraising techniques and practices to enhance the financial commitment of individuals, corporations, foundations, and government to "real-life" development projects

**475 Studies in Political Thought (5)**

Prereq: 1 course in political thought or perm. Selected topics in political theory; e.g., anarchism, socialism, democratic theory, technology and politics, etc. Consult department for information pertaining to current course description and schedule.

**476A American Political Thought (4)**

Prereq: 11 hrs POLS or history. Origin and development of political ideas from colonial period through slave controversy.

**476B American Political Thought (4)**

Prereq: 11 hrs POLS or history. Continuation of 476A but can be taken independently. Begins with Social Darwinism and concludes with contemporary political ideas in America.

**477 Legal Theory and Social Problems (4)**

Prereq: 12 hrs POLS or perm. Examination of legal reasoning and normative values of judges, lawyers, legal theorists, and administrative agencies in shaping legal solutions to contemporary social problems. Emphasis on developing one's own political, legal, and philosophical values.

**478 Feminist Political Theories and Movements (5)**

Prereq: jr or perm. Explores issues of power, powerlessness, oppression, and transcending oppression. Views feminism as human rights movement. Topics: origins and history of sexism and feminism, classic treatises of feminist political theory, contemporary theories from conservative to anarchist, visions of post-sexist futures, movement strategies and tactics, practical applications.

**479 Latin American Political Thought (4)**

Prereq: 11 hrs POLS. Evolution of Latin American political thought from conquest to present. Major emphasis on 20th-century movements such as Democratic Left, Progressive Catholic Left, and Marxist Revolutionary Left.

**481 Modern Political Analysis (4)**

Prereq: 20 hrs POLS or perm. Examination of problems of knowledge in social sciences with particular emphasis on political science. Analysis of major theories or approaches developed in political science recently.

**482 Quantitative Political Analysis (5)**

Prereq: 481 or perm. Designed to show relevance of scientific research techniques to study of politics.

**483 Statistical Package for the Social Sciences (4)**

Prereq: PSY 121 or POLS 482 or equiv. Designed to introduce social science students, with some statistical background, to the use of the microcomputer for data analysis. Although the focus is the structure and syntax of SPSS/PC, fundamental data analysis problems will be discussed in the context of computer applications.

**484 Management Skills for Public Administration (5)**

Prereq: jr. Practicum designed to introduce students to several management skills needed for success in public administration and to permit them to apply these skills in a classroom setting.

**486 Public Budgeting (4)**

Prereq: 210 or 411 or perm. Examines politics, techniques, and consequences of public budgeting processes at federal, state, and local levels.

**487 Financial Management in Government (4)**

Prereq: 210, 411 or equiv or perm. Examines financial aspects of state and local governments. Financial conditions of these governments discussed in conjunction with various actions governments take to deal with them.

**488 Public Dispute Resolution (4)**

Prereq: jr. Examines the field of alternative dispute resolution. Focus is on the dynamics and management of such public issues as facility siting, natural resource use, and community funding. Topics include conflict assessment, negotiation, mediation, and the politics of alternative dispute resolution.

**489 Nonprofit Management (4)**

An introduction to the nonprofit sector and its role in society, the economy, and the delivery of human services. Includes an overview of principle management functions as each applies to nonprofit organizations.

**490 Studies in Political Science (3–5)**

Prereq: 11 hrs POLS or perm. Intensive study of special topics in field of political science, including American government and politics, comparative government, international relations, political theory, and public administration.

**492A–E Research in Political Science (1–5)**

Prereq: 18 hrs POLS; max 20 hrs in 492ABCDE; max 10 hrs in one course. Research in selected subfields of political science; international relations, American politics, comparative government, public administration, political theory. See quarterly schedule of classes for registration information.

**494A–Z Workshops in Selected Topics (1)**

Prereq: perm. Workshop in selected topics.

**495 Public Affairs Internship (1–15)**

Prereq: jr or above, POLS major, or perm. Provides qualified students with opportunity to learn through working in selected public and private agencies.

**496X International Internship(1–15)**

Internship outside the United States.

**Professional Communication (PRCM)****150 Business Communication Basics (4)**

Prereq: BA 100A. Introduces the basic business communication principles and practices and sets the communication standards in preparation for real world workplace experiences. Business-related cases are utilized for research, writing, and speaking activities. Some attention is given to early preparation for internship research.

**325J Professional Communication (4) (1J)**

Prereq: jr or sr, Tier I English. Provides opportunities to practice and improve written and spoken communication skills, both individual and collaborative, which are appropriate for career success. Utilizes strategic managerial communication skills in analyzing business problems or situations and choosing the appropriate communication processes, products, or events to meet organizational needs.

**Psychology (PSY)****101 General Psychology (5) (2S)**

Introduction to psychology. Survey of topics in experimental and clinical psychology including physiological bases of behavior, sensation, perception, learning, memory, human development, social processes, personality, and abnormal behavior.

**120 Elementary Statistical Reasoning (4) (1M)**

Prereq: Math placement level I or higher or MATH 101 or 102. Introduction to research methodology and descriptive and inferential statistics, emphasizing the development of practical reasoning skills necessary for the comprehension and critical evaluation of statistical information typically encountered in everyday life. No credit for both 120 and any of the following: MATH 250, MATH 250B, MATH 251, PSY 121. No credit if already credit for PSY 221 or QBA 201; no credit toward psychology major.

**190 Workshops in Applied Psychology (1–2, max 5)**

Workshops on specific topics in applied psychology, offered yearly, carrying predetermined alphabetical designations (e.g., 190A). Students seeking academic credit must complete satisfactorily written project determined by instructor. Graded credit/no credit.

**201 Sensation and Perception (4)**

Prereq: 101. Sensory and perceptual processes in vision, audition, somesthesia, gustation, olfaction, and kinesthesia. Theory and research on perceptual phenomena with an emphasis on visual and auditory modalities, including perception of objects, space, and events; effects of person variables on perception; perceptual development.

**203 Learning (4)**

Prereq: 101 and 120 or 221. Experimental investigation of classical and operant conditioning, discrimination learning, generalization, related phenomena.

**221 Statistics for the Behavioral Sciences (5) (1M)**

Prereq: Math placement level 2 or higher or MATH 113, or 115, or 163A or 263A. Introduction to descriptive and inferential statistics with emphasis on inferential statistics. No credit for both 221 and any of the following: MATH 251, PSY 121, QBA 201, COMS 301, ECON 381.

**226 Research Methods in Psychology (4)**

Prereq: 101 and 221. Training in scientific methods and techniques of modern experimental psychology with individual reports of experiments.

**233 Psychology of Personality (4)**

Prereq: 101. Development and organization of personality, with evaluation of major theoretical viewpoints; research on personality structure, dynamics, and change.

**261 Survey of Industrial and Organizational Psychology (4)**

Prereq: 101 and 120 or 221 or QBA 201. Survey of industrial and organizational psychology; emphasis on application of psychological theories and research to organizational situation.

**273 Child and Adolescent Psychology (4)**

Prereq: 101. Basic principles of human development from the prenatal period through adolescence. Theory and literature on physical, cognitive, and socioemotional development. No credit awarded if HCCF 160 or EDEL 200 has been taken. Will not count toward requirements for Education majors.

**275 Educational Psychology (4)**

Prereq: 101. Applications of psychological theories and models to educational settings (emphasis on schools). Major topics include goals of education; cognitive, social, and affective development in children; cognitive and behavioral models of learning; motivation; individual differences; effects of social class, ethnicity, gender, and cultural deprivation on learning and development; tests and evaluation. Emphasis is on the role of teachers and parents as facilitators of learning and development. No credit awarded if EDCI 275 has been taken.

**304 Human Learning and Cognitive Processes (4)**

Prereq: 12 hrs PSY including 101 and 221. Theoretical and experimental investigations of learning in human beings: concept learning, problem solving, memory, motor skills, and language.

**305 Human Memory (4)**

Prereq: 12 hrs PSY including 101 and 226. Structure and processes of human memory, including historical models of memory, contemporary theories of memory, techniques used in memory experimentation, memory stores, memory codes, mnemonic devices, memory failures, neurological basis of memory and memory failures, and computer models of memory.

**307 Psycholinguistics (4)**

Prereq: 9 hrs PSY including 101 or perm. How people produce, understand, and acquire language; psychological and linguistic theories. Emphasis on use of language.

**308 Human Judgment and Decision Making (4)**

Prereq: 226. Descriptive and prescriptive models of human judgment and decision making. Topics include how people understand uncertainty, and how they learn the relationships that enable them to make predictions, make decisions when the outcomes of these decisions are uncertain, and perceive risks. No credit awarded if MGT 430 has been taken.

**310 Motivation (4)**

Prereq: 12 hrs PSY including 101. Survey of theories of motivation, with emphasis on human motivation.

**312 Physiological Psychology (4)**

Prereq: 101. Physiological mechanisms involved in perception, movement, motivation, learning, emotions, and mental disorders. Anatomy, physiology, and chemical activities of cells in the nervous and endocrine systems. Research approaches for studying interactions between physiology and behavior.

**314 Comparative Psychology (5)**

Prereq: 9 hrs PSY including 101. Behavior of animals across phylo-genetic scale. Interaction of genetics, hormones, learning, etc., in development of behavior. Lecture, lab, field trips, and naturalistic movies.

**315 Behavior Genetics and Individual Differences (5)**

Prereq: 9 hrs PSY including 101. Extensive survey of individual differences and their relationship to genetic factors. Topics include chromosomal abnormalities, inborn errors of metabolism, genetic and prenatal screening, behaviors in infants, genetics and intellectual differences, psychopathology and genetics, racial differences, and continuing evolution of behavior.

**321 Advanced Statistics for the Behavioral Sciences (5)**

Prereq: 101, 221, and 226. Statistical techniques through multifactor analysis of variance and multiple regression analyses. Integration of experimental design with statistical analysis. Does not apply to Arts and Sciences social sciences or natural sciences requirement.

**327 Human Psychophysiology (4)**

Prereq: 101 and 120 or 221. Relationships between psychological variables and physiological events in humans. Measures of cardiovascular, electrodermal,

muscle, respiratory, and central nervous system activity; recording techniques; research findings; and applications such as biofeedback and lie detection.

**332 Abnormal Psychology (4)**

Prereq: 9 hrs PSY including 101. Behavior disorders, their cause and effects on person, family, and society.

**335 Environmental Psychology (5)**

Prereq: 9 hrs PSY including 101. Natural and built environments as factors of human behavior, cognition, and choice. Research concerning environmental design and evaluation from psychological standpoint emphasized.

**336 Social Psychology (4)**

Prereq: 101 and 120 or 221. Theory and research on the ways that people think about, influence, and relate to one another. Specific topics include attitudes and behavior, social perception and cognition, conformity, persuasion, group influence, aggression, attraction, and helping behavior.

**337 Social Psychology of Justice (4)**

Prereq: 9 hrs PSY including 101 (336 recommended). Theory and research on the interface of psychology and the legal system (with an emphasis on social psychology). Specific topics include dilemmas faced by psychologists in the legal system; legality vs. morality; the socialization, training, and ethics of lawyers and police; perception memory and error in eyewitness testimony; hypnosis; lie detection and confessions; rights of victims and accused; rape and rapists; arrest and trial; jury selection; jury dynamics and deliberations; insanity and the prediction of dangerousness; sentencing; death penalty; rights of special groups; theories of crime.

**341 Tests and Measurements (4)**

Prereq: 12 hrs PSY including 101 and 221. Tests, psychophysical methods, scaling techniques, and questionnaires. Basic criteria including reliability, homogeneity, and validity.

**351 Introduction to Clinical and Counseling Psychology (4)**

Prereq: 12 hrs PSY including 233 or 332. Diagnostic and remedial procedures and resources; professional problems, duties, skills, and interprofessional relationships.

**361 Advanced Organizational Psychology (4)**

Prereq: 261. Study of behavior in organizations with emphasis on applying psychological research and principles to understanding structure and process of (primarily work) organizations.

**362 Personnel Psychology (4)**

Prereq: 261. In-depth coverage of topics in personnel psychology including job analysis, organizational entry, and training and evaluation of personnel.

**374 Psychology of Adulthood and Aging (4)**

Prereq: 9 hrs PSY including 101 (273 recommended). Behavioral change and continuity over adult years through old age. Emphasis on interaction of psychological, sociocultural, and biological variables as they contribute to behaviors of aging individual from perspective of developmental framework.

**376 Psychological Disorders of Childhood (4)**

Prereq: 101 and 273 or HCCF 160 or EDEL 200. Characteristics, etiology, and treatment of abnormal child behavior: anxiety, mood, developmental, eating, attention-deficit, conduct, and selected pediatric disorders.

**378 Psychology of Gender (4)**

Prereq: 9 hrs PSY including 101. Sex differences in physical characteristics, abilities, personality, and social behavior; development of sex roles; sex roles across the life span; relationships of sex, gender, and sex roles to interpersonal functioning, work and psychological disorders.

**380 Psychology of Health and Illness (4)**

Prereq: 12 hrs PSY including 101. Theory and research on the psychological aspects of physical health and illness; interrelationships of behavior, emotion, stress, lifestyle, and illness; psychological factors in disorders such as hypertension, coronary artery disease, headache, asthma, and immune disorders; applications and effectiveness of psychological interventions.

**390 Research in Psychology (1-5, max 15)**

Prereq: 226 and written perm. Supervised independent research on predefined problem. Graded credit/no credit.

**418 History and Systems of Psychology (4)**

Prereq: 20 hours PSY. Comparative, historical review of major conceptual orientations in psychology within last century. Includes analysis of important philosophy of science issues bearing on psychology, such as nature of theory, observation, explanation, and some specialized topics especially pertinent to psychology.

**430 Psychoactive Drugs: Therapeutic Agents and Drugs of Abuse (4)**

Prereq: 312 or 332 or 376 or BIOS 171. Patterns of use and abuse of psychoactive agents, behavioral and physiological effects of drugs; etiological factors in drug abuse; treatment of drug abuse; use of drugs in the treatment of mental disorders; comparative effectiveness and integration of pharmacological and psychological interventions; research methods and problems in conducting research.

**470 Prenatal Influences on Development (4)**

Prereq: PSY 273 or EDEL 200 or HCCF 160; and PSY 312 or 1 biology course. Prenatal and perinatal influences on development, including the effects of genetic errors, drugs, nutrition, diseases, maternal behaviors, prematurity, and birthing techniques.

**489 Fieldwork in Psychology (1-5, max 5)**

Prereq: written perm. Independent fieldwork as volunteer or employee in work directly related to psychology. Arrangements for course credit must be approved before fieldwork begins. Contact assistant chair for undergrad studies to complete necessary forms. Graded credit/no credit.

**490 Seminars in Psychology (5)**

Prereq: dependent on seminar; perm required. Several seminars on specific topics in psychology offered yearly, carrying predetermined alphabetical designations (e.g., 490A). See *Schedule of Classes* for topics each qtr.

**491 Special Problems in Psychology (1-15)**

Prereq: written perm. Independent work on special problem with any psychology professor.

**492X Special Problems—Psychology (1-15)**

Prereq: Study Abroad Program, perm.

**496H Psychology Honors Seminar (3-5)**

Prereq: perm, admission to departmental honors program. Seminar on specific topics. See *Schedule of Classes* each qtr.

**497H Readings in Honors Work (1-4, max 10)**

Prereq: perm.

**498H Honors Work in Psychology (1-4, max 10)**

Prereq: perm. Preparation for 499H.

**499H Honors Work in Psychology (Thesis) (3-7, max 15)**

Prereq: perm.

## Quantitative Business Analysis (QBA)

**201 Introduction to Business Statistics (4)**

Prereq: MATH 163A pr 263A, MATH 250. Sampling plans, sampling distribution, decision analysis, estimation and hypothesis testing (one and two population tests), simple linear regression analysis, nonparametric statistical tests.

**491 Seminar (4)**

Prereq: perm. Selected topics of current interest in quantitative business analysis area.

**497 Independent Research (1-4)**

Prereq: perm. Research in selected fields of quantitative business analysis under direction of faculty member.

**498 Internship (1-4)**

Prereq: perm.

## Real Estate Technology (REAL)

Real estate courses are available on the Athens campus through Lifelong Learning Programs and at the regional campuses through Continuing Education offices.

### 101 Real Estate Principles and Practices I (4)

Real property is basic resource with which real estate professionals work. Course includes, but is not limited to, land and its description, rights and interests in real estate, contract law and real estate contracts, title transfer, deeds, leases, financing and mortgages, taxes, home ownership, urban planning, brokerage operations, appraisal and value, applied real estate math, and Ohio requirements for real estate licenses.

### 102 Real Estate Brokerage (4)

Prereq: 101 or perm. Expands on 101 and includes specialized fields of real estate, principal-agent relationship, listing principles and practices, closing principles and practices, sales contract, principles of economics and real estate appraising, property insurance, real estate finance, federal laws regulating real estate practice, mathematics in real estate, and other facets of real estate needed by real estate professional; Ohio licensing laws and requirements.

### 103 Real Estate Law (4)

Prereq: 101. Includes all legal areas commonly concerned with typical real estate professional. Among topics covered are law of agency as applied to real estate brokers and sales personnel, law of fixtures, estates, conveyancing of real estate, mortgages and liens, license laws of Ohio, and zoning.

### 201 Real Estate Appraising I (4)

Deals with appraisal theory, basic principles affecting value of real property; data accumulation and analysis of city, neighborhood, site, and property; applied techniques and estimating value from 3 approaches; building analysis, depreciation; entire range of appraisal process; and preparation based on field experience of preparing single-family residential appraisal report.

### 204 Real Estate Finance (4)

Prereq: 101. Includes institutions, methods, instruments, and procedures involved in financing of real estate; nature and characteristics of mortgage loans, government influence on real estate finance, and nature of mortgage market. Effects of monetary and fiscal policies on real estate financing considered.

### 221 Real Estate—Special Topics (4)

Prereq: 204. Special topics in real estate covered. Areas include professionalism, ethics, salesmanship, human relations, F.H.A. and V.A. financing. Real estate office, advertising, building construction and materials, current issues, and problems facing real estate professional also considered.

## Recreation and Sport Sciences

### Athletic Training (RSAT)

**128 Introduction to Athletic Training (2)**  
Introduction to prevention and care of athletic injuries. No credit if RSAT 129 or 140. 2 lec.

### 155 Introduction to Athletic Training Education (4)

(fall) Provides detailed introduction to the field of athletic training. Includes basic information on topics of the sports medicine team, administration issues, therapeutic modalities and exercise, strength and flexibility training, nutrition, pharmacology, psychological intervention, emergency procedures, and injuries to specific structures of the body. 4 lec.

### 160 Practice Aspects of Athletic Training (2)

Prereq: 155. (winter) Introduction of practical athletic training skills with emphasis on preventive and protective injuries. 2 lec, 1 lab.

### 165 Athletic Injuries Prevention and Management (4)

Prereq: 160, 180B; no credit if 150. (spring) Provides information on the prevention and

management of athletic injuries. Topics include musculoskeletal injuries, systematic disorders, skin diseases, environmental disorders, and other ailments related to the human body. 4 lec.

### 180A Practical Applications of Athletic Training I (1)

Coreq: 140. (fall) The practical application course is the first course in a series of three designed to teach and provide basic athletic training clinical skills and techniques required by the entry-level student athletic trainer. 2 lab.

### 180B Practical Applications of Athletic Training II (1)

Prereq: 180A. (winter) The practical application course is the second course in a series of three designed to teach and provide basic athletic training clinical skills and techniques required by the entry-level student athletic trainer. 2 lab.

### 180C Practical Applications of Athletic Training III (1)

Prereq: 180B. (spring) The practical application course is the third course in a series of three designed to teach and provide basic athletic training clinical skills and techniques required by the entry-level student athletic trainer. 2 lab.

### 215 Emergency Response and Care in Athletic Training (5)

Prereq: 165, 180C; no credit if 245. (fall) Advanced course in emergency care designed for athletic training majors. Hands-on experience allows realization of proper emergency care. Experience reinforced with comprehension of related policies and procedures as well as their application. 4 lec. 2 lab.

### 220 Orthopedic Evaluation and Assessment of Athletic Injuries I (5)

Prereq: 215, 280B, BIOS 301; no credit if 240 (winter) Provides students with hands-on experience that prepares them to perform orthopedic assessments within the field of athletic training. Students take medical histories; palpate bony and soft structures; perform range of motion, neurological and circulatory tests; and perform orthopedic special tests for the lower extremities and lumbar spine. 3 lec. 4 lab.

### 225 Orthopedic Evaluation and Assessment of Athletic Injuries II (5)

Prereq: 220; no credit if 300. (spring) Provides students with hands-on experience that prepares them to perform orthopedic assessments within the field of athletic training. Students take medical histories; palpate bony and soft structures; perform range of motion, neurological and circulatory tests; and perform orthopedic special tests for the upper extremities, head, cervical spine, and abdomen. 3 lec. 4 lab.

### 280A Clinical Applications in Athletic Training I (1)

Prereq: C or better 165; 180C, major. (fall) The clinical application course is designed to provide the student with the understanding of advanced athletic training applications and techniques used in the prevention and management of athletic injuries. Provides "hands-on" clinical skills necessary for the continued development of the student athletic trainer. 2 lab.

### 280B Clinical Applications in Athletic Training II (1)

Prereq: 280A. (winter) The clinical application course is designed to provide the student with the understanding of advanced athletic training applications and techniques used in the prevention and management of athletic injuries. Provides "hands-on" clinical skills necessary for the continued development of the student athletic trainer. 2 lab.

### 280C Clinical Applications in Athletic Training III (1)

Prereq: 280B. (spring) The clinical application course is designed to provide the student with the understanding of advanced athletic training applications and techniques used in the prevention and management of athletic injuries. Provides "hands-on" clinical skills necessary for the continued development of the student athletic trainer. 2 lab.

### 305 Interdisciplinary Aspects of Sports Medicine (2)

Prereq: 280C, 225 (fall) Exposes students to a variety of medical specialists and allied health personnel and the role they play in the sports medicine team. 2 lec.

### 308 Pharmacology and Athletic Training Education (3)

Prereq: 280C, 300, HLTH 204. (winter) Examines pharmacological issues related to the field of athletic training. Issues include the use of the Physician's Desk Reference (PDR), documentation and tracking medications, identifying and administering medications, and handling overdose and poisoning situations. 3 lec.

### 310 Therapeutic Exercise (5)

Prereq: C or better 225; 380A. (winter) Concepts and practices associated with the conditioning and reconditioning (rehabilitation) of athletic injuries. 4 lec, 2 lab.

### 315 Therapeutic Modalities (5)

Prereq: C or better 310; 380B. (spring) Principles and practical skills associated with therapeutic modalities used in the treatment and rehabilitation of athletic injuries. 4 lec, 2 lab.

### 350 Independent Study (1-5)

Prereq: jr, perm. Selected individual case studies utilizing techniques and theories in rehabilitation of athletic injuries. Additional one-hour credit for oral presentation of written analysis. Case studies completed under direction of athletic training faculty.

### 360 Orthopedic Appliances (4)

Prereq: 315. Information on applications and techniques utilized by sports medicine professionals in orthopedic settings, 3 lec, 2 lab.

### 380A Clinical Applications in Athletic Training IV (1)

Prereq: C or better 225; 280C. (fall) The clinical application course is designed to provide the student with the understanding of advanced athletic training applications and techniques used in the evaluation and rehabilitation of athletic injuries. Provides "hands-on" clinical skills necessary for the continued development of the student athletic trainer. 2 lab.

### 380B Clinical Applications in Athletic Training V (1)

Prereq: C or better 225; 350A. (winter) The clinical application course is designed to provide the student with the understanding of advanced athletic training applications and techniques used in the evaluation and rehabilitation of athletic injuries. Provides "hands-on" clinical skills necessary for the continued development of the student athletic trainer. 2 lab.

### 380C Clinical Applications in Athletic Training VI (1)

Prereq: C or better 310; 380B. (spring) The clinical application course is designed to provide the student with the understanding of advanced athletic training applications and techniques used in the evaluation and rehabilitation of athletic injuries. Provides "hands-on" clinical skills necessary for the continued development of the student athletic trainer. 2 lab.

### 381 Evidence-Based Practice in Athletic Training (4)

Prereq: 315. Introduces research topics and the data collection and application of statistical methods used in athletic training and related research. Assists students in preparing for graduate study through the development of a research proposal. 4 lec.

### 418A Instructional Experiences (1-15)

Prereq: perm. Supervised practice in organizing and teaching activities in college and recreational settings.

### 425 Athletic Training Senior Seminar (5)

Prereq: 380C, Sr; no credit if 420. (fall) Examines issues related to the implementation and management of athletic training programs. Provides an overview of the athletic training education curriculum to assist in preparation for the National Athletic Trainer's Association Board of Certification (NATABOC) Examination. 5 lec.

### 480A Clinical Applications in Athletic Training VII (1)

Prereq: C or better 315. 380C. (fall) The clinical application course series is designed to be the culminating clinical experience so to provide the student with the understanding of advanced athletic training applications and techniques used in the therapeutic modalities and the administration of athletic training programs. Provides "hands-on" clinical skills necessary for the continued development of the student athletic trainer. 2 lab.

**480B Clinical Applications in Athletic Training VIII (1)**

Prereq: 480A. (winter) The clinical application course series is designed to provide the student with the understanding of advanced athletic training applications and techniques used in the therapeutic modalities and the administration of athletic training programs. Provides "hands-on" clinical skills necessary for the continued development of the student athletic trainer. 2 lab.

**480C Clinical Applications in Athletic Training IX (1)**

Prereq: C or better 425; 480B. (spring) The clinical application course series is designed to be the culminating clinical experience so to provide the student with the understanding of advanced athletic training applications and techniques used in the therapeutic modalities and the administration of athletic training programs. Provides "hands-on" clinical skills necessary for the continued development of the student athletic trainer. 2 lab.

**490 Clinical Internship (1-16)**

Prereq: major, sr. Elective internship in sports medicine clinical facility. (Student may not earn more than 24 total credit hours in any combination of 280, 480, and 490.)

**Physical Education Activity (PED)**

These courses are for students wishing to gain competency in a physical activity. Courses are offered on a pass/fail basis. (Horseback courses are letter graded for students enrolled in the Equine Studies Program on the Southern campus.) While no limit overall has been set for repeats of PED courses, individual majors, schools, departments, and colleges may limit the number of repeat hours that will count toward graduation.

- 100 Basketball
- 101 Lacrosse
- 102 Softball
- 103 Volleyball I
- 104 Volleyball II
- 105 Ultimate Frisbee
- 110 Dance, Belly I
- 111 Dance, Belly II
- 112 Dance, Belly III
- 113 Dance, Country
- 114 Dance, Social
- 120 Aerobic Conditioning
- 121 Aerobic Dance
- 122 Circuit Fitness
- 123 Conditioning and Weight Training
- 124 Jogging
- 125 Physical Conditioning I
- 126 Physical Conditioning II
- 127 Physical Conditioning III
- 129 Bowling
- 130 Golf I
- 131 Golf II
- 132 Golf III
- 133 Handball I
- 134 Handball II
- 135 Racquetball I
- 136 Racquetball II
- 137 Tennis I
- 138 Tennis II
- 139 Tennis III
- 140 Aqua Aerobics
- 141 Diving I
- 142 Diving II
- 143 Scuba\*
- 144 Swimming I
- 145 Swimming II
- 146 Swimming III

- 147 Swimming IV
- 148 Swimming, Synchronized I
- 149 Swimming, Synchronized II
- 150 Swimming, Workouts
- 151 Water Polo
- 152 Water Skiing I\*
- 153 Water Skiing II\*
- 154 Water Skiing, Competitive\*
- 160 Broomball
- 161 Hockey
- 162 Skating I
- 163 Skating II
- 164 Skating, Figure I
- 165 Skating, Figure II
- 166 Horseback Saddle Seat I\*
- 167 Horseback Saddle Seat II\*
- 168 Horseback Saddle Seat III\*
- 170 Horseback Hunt Seat I\*
- 171 Horseback Hunt Seat II\*
- 172 Horseback Hunt Seat III\*
- 173 Horseback Hunt Seat IV\*
- 174 Horseback West I\*
- 175 Horseback West II\*
- 176 Horseback West III\*
- 177 Horseback West IV\*
- 178 Horseback Jumping I\*
- 179 Horseback Jumping II\*
- 180 Horseback Saddle Seat IV\*
- 182 Karate I
- 183 Karate II
- 184 Tae Kwon Do I
- 185 Tae Kwon Do II
- 186 Judo I
- 187 Judo II
- 190 Special Needs PE
- 191 Archery
- 192 Boating
- 193 Badminton
- 194 Horseback Trail Riding\*
- 195 Snow Skiing I
- 196 Snow Skiing II

\* Special Fee Added

**Physical Education and Sport Sciences (PESS)****100 The Student-Athlete Experience (1)**

Prereq: fr. only. (fall) Orientation for first-year student-athletes that introduces them to campus resources in order to assist in the transition from high school to college. Introduces concepts related to time management and life skills through the NCAA CHAMPS/Life Skills Program. Presentations from various campus groups. 1 lec.

**103 Beginning Swimming (2)**

Basic swimming skills. Students will be assessed by the instructor the first week of class to determine if their skill level is appropriate for 103 or if should change into 104. 4 lab.

**104 Intermediate Swimming (2)**

Instruction in basic stroke and related aquatic skills at intermediate and advanced level. Students will be assessed by the instructor the first week of class to determine if their skill level is appropriate for 104 or if should change into 103. 4 lab.

**107 Modern Dance I (2)**

Prereq: sport sc or PE major. (fall) Basic principles of dance technique. Movement progressions involving relationships of time, space, and dynamics. 4 lab.

**109 Synchronized Swimming (2)**

Prereq: 104, intermediate swimming skill or perm. Focuses on basic principles of 104. Development of simple stunts, sculling, and modified strokes; experimentation in group and individual composition. 4 lab.

**110 Aqua Aerobics (2)**

Prereq: sport sc or PE major. Designed to help students develop knowledge, skills, and positive attitudes concerning fitness through aquatic exercises. Covers various forms of aquatic exercise, program components, and lap swimming. 4 lab.

**115 Rhythmics (2)**

Prereq: sport sc, PE, REC, or music therapy major. (fall) Practical approach to rhythm fundamentals through various dance forms. 4 lab.

**116 Social Forms of Dance (2)**

Prereq: 115. Intermediate skills in ballroom, round, mixers, couple, and contra dance. 4 lab.

**117 Folk and Square Dance (2)**

Prereq: 115. Introduces folk and square dance skills, and allows students majoring in physical education to develop competency in this area of dance. 4 lab.

**125 Human Movement and Fitness Perspectives (4)**

Introduces students to the basic concepts of human movement and fitness. Students will develop skills to analyze basic human movement as it applies to sport and fitness. Students will also learn the foundation of health related physical fitness, and how to integrate fitness activities into their lifestyles. 3 lec, 2 lab.

**126 Skill and Fitness for Physical Education Teachers (4)**

Prereq: fr. and soph. Physical skill mastery and high levels of physical fitness are expectations of physical educators. Introduces variety of locomotor, non-locomotor and manipulative skills designed to measure student understanding and motor ability. A series of fitness activities that measure aerobic, anaerobic, flexibility, strength and endurance levels also are included. 1 lec, 6 lab.

**141A Archery (2)**

Prereq: sport sc major. Increases archery skill of students majoring in sport sciences. 4 lab.

**141B Golf (2)**

Prereq: sport sc major. Increases golf skill of students majoring in sport sciences. 4 lab.

**149 Introduction to Exercise Science (4)**

Prereq: Fr or soph, no credit if PESS 125 and 203. Introduces students to professions in exercise sciences with special emphasis on exercise physiology. Basic concepts of human movement and the foundations of wellness and health related physical fitness are introduced. 3 lec, 2 lab.

**202 Introduction to Physical Education/Teacher Education (4)**

Prereq: fr. or soph. (fall, spring) Introduces prospective physical educators to the multiple methods of becoming an effective teacher for children in pre-kindergarten (age 3) through grade 12. Observation of and content development in early childhood, middle childhood, and adolescent and young adult physical education programs will be explored. 3 lec., 2 lab.

**203 Introduction to Exercise Physiology (3)**

Prereq: fr. or soph. Introduces students to the various disciplines of exercise physiology. Emphasizes the disciplines required in various professional applications (fitness, rehabilitation, performance and research) of exercise physiology. 3 lec.

**204 History and Principles of Physical Education (4)**

Prereq: professional standing in sport sciences. (winter) History of sport and physical education from ancient to modern times. Principles underlying physical education in modern program of education are covered. 4 lec.

**205 Fundamentals of Movement, Rhythms and Dance (3)**

Prereq: professional standing in sport sciences. (fall) Introduces students to the disciplines and progressions of teaching human movement, rhythmical activities, and fundamentals of dance