

880. Organization and Control in the Political Economy: Institutions and Theory
Winter of even-numbered years. 4(4-0)
Interdepartmental with the Department of Management.

Organization and technique in choice and implementation of economic (especially planning, programming) functions of political authority.

881. Organization and Control in the Political Economy: Selected Problems
Winter of odd-numbered years. 4(4-0)
Approval of instructor. Interdepartmental with the Department of Management.

Analysis of role and tasks, appropriate techniques and organizational structures of political agencies in planning and management of complex programs.

891. Topics in Applied Econometrics
Spring. 3(3-0) EC 835 or EC 877.

Topics in applied econometrics with particular attention to problems of testing hypotheses in the context of economic models.

895. Graduate Reading in Economics
Fall, Winter, Spring, Summer. 1 to 4 credits. May reenroll for a maximum of 8 credits.

900. Special Topics in Economic Theory
Fall, Winter, Spring, Summer. 3(3-0)
May reenroll for a maximum of 12 credits. EC 812C; EC 813C.

Special topics in economic theory of current interest and importance.

972. Methodological Approaches to Research
Fall of even-numbered years, Summer of odd-numbered years. 3(3-0) Two terms of graduate study in social science or approval of department. Interdepartmental with and administered by the Department of Agricultural Economics.

Selection, planning and conduct of research. Alternative research approaches. Role of theory, beliefs and valuations. Critical appraisal of research studies.

990B. Industrial Organization and Public Policy Workshop
Fall, Winter, Spring. 3 to 16 credits.
Approval of department.

Critical evaluation of research reports by staff and other students. Students writing doctoral dissertations in the appropriate areas are encouraged to participate in workshop and may do so while registered for EC 999.

990C. Mathematical Economics and Econometrics Workshop
Fall, Winter, Spring. 3 to 16 credits.
EC 812A, EC 832; or approval of department. Interdepartmental with the Department of Agricultural Economics.

Critical evaluation of research reports by staff and other students. Students writing doctoral dissertations in the appropriate areas are encouraged to participate in workshop and may do so while registered for EC 999.

990D. Economic Development Workshop
Fall, Winter, Spring, Summer. 3 to 16 credits. EC 850, EC 851, EC 852 or approval of department.

Critical evaluation of research reports by staff and students. Students writing doctoral dissertations in Development are encouraged to participate in the workshop and may do so while registered for EC 999.

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

EDUCATION

See Counseling, Educational Psychology and Special Education; Educational Administration; Health and Physical Education; and Teacher Education.

EDUCATIONAL ADMINISTRATION EAD

(Name changed effective July 1, 1984. Formerly department of Administration and Curriculum.)

College of Education

415. Student Leadership Training
(ED 415., EAC 415.) Fall, Winter, Spring. 2(0-4) May reenroll for a maximum of 4 credits if different topic is taken. Approval of instructor.

Prepares students for leadership roles and responsibilities by encouraging the development of skills and techniques consistent with the principles of our democratic society.

433. Alcohol: A Social Dilemma
(ED 433., EAC 433.) Winter. 3(3-0)
Juniors or approval of department. Interdepartmental with and administered by the School of Criminal Justice.

Substance abuse with emphasis on beverage alcohol. Sociological, psychological and medical aspects. Prevention, treatment, rehabilitation.

805A. Educational Development Planning: Basic Concepts
(ED 879., EAC 805A.) Winter. 3(3-0)
Approval of department.

Basic concepts of economic, social and political development are studied as they place demands upon educational planners to cope with them. The distribution of development benefits is stressed.

805B. Educational Planning and National Development
(ED 880., EAC 805B.) Spring. 3(3-0)
EAD 805A.

Formulation of educational development strategies and plans to deal with crucial national and community development problem areas paying particular attention to meeting the special needs of audiences with special problems.

805C. Higher Education in Developing Countries
Fall. 3(3-0) Approval of department.

National and international development roles of higher educational institutions and personnel. Major focus on science and the appropriate technology for applying scientific knowledge to developmental problems in specific socio-cultural settings.

816E. Instructional Simulation
(ED 823., EAC 816E.) Fall, Summer. 3(2-2) Teaching experience. Interdepartmental with and administered by the Department of Teacher Education.

Design and use of simulations and instructional games in the curriculum for development of social skills, values and affects.

816J. Studies in Nonformal Education
(EAC 816J.) Summer. 4(3-2) Approval of department.

International invitational workshop for specialists, project planners, staff trainers and practitioners. Worldwide selection of contemporary case studies of nonformal education. Focus is on out-of-school education for development.

816K. Curriculum for Nonformal Education
(E D 821E., EAC 816K.) Winter. 3(3-0) T E 810A, T E 810C or EAD 860.

Principles of curriculum related to non-formal education programs. Consideration of various fields of out-of-school education and training associated with community level rural and urban human resource development.

839. African Research
(IDC 838., EAC 839.) Fall, Winter, Spring. 2 to 4 credits. May reenroll for a maximum of 8 credits. Graduate standing or approval of instructor. Interdepartmental with African Languages and the departments of Anthropology, Geography, History, Political Science, and Sociology. Administered by the Department of Anthropology.

African-related archival and field research topics and methodologies viewed from perspective of relevant social science and humanistic disciplines associated with the African Studies Center.

850. The Teacher and Administrative Leadership
(ED 850., EAC 850.) Winter, Summer. 3(3-0) Twelve credits in Education and approval of department.

Not intended for school administration majors. Theory and practice underlying administration of schools in a democratic society. Intended for educational personnel seeking basic information in such areas as educational organization, roles of administrative leadership in schools and communities, and teacher's roles in administration.

851A. Foundations of Administration: Theory and Organization
(ED 851A., EAC 851A.) Fall, Winter, Summer. 3(3-0) Approval of department.

Emphasizes basic administrative theory and research, focuses on current practice and emerging trends in such problems and issues as personnel, plant, finance, community school programs, and instructional improvement. Intended primarily for persons actively preparing for administrative positions in schools and other educational agencies.

851B. Foundations of Administration: Practice and Problems
(ED 851B., EAC 851B.) Winter, Spring, Summer. 3(3-0) EAD 851A or approval of department.

Emphasizes basic administrative theory and research, focuses on current practice and emerging trends in such problems and issues as personnel, plant, finance, community school programs, and instructional improvement. Intended primarily for persons actively preparing for administrative positions in schools and other educational agencies.

852A. Administration of Educational Institutions: Elementary School Administration
(ED 852A., EAC 852A.) Winter, Summer. 3(3-0) Twelve graduate credits in Education including EAD 851A, EAD 851B or approval of department.

Exploration of the nature and scope of responsibilities of areas in educational administration. Designed to serve as an initial application of administrative theory for those aspiring to one of the several areas.

**Descriptions — Educational Administration
of
Courses**

852B. Administration of Educational Institutions: Secondary School Administration
(ED 852B., EAC 852B.) Fall, Winter, Spring, Summer. 3(3-0) Twelve graduate credits in Education including EAD 851A, EAD 851B or approval of department.

Exploration of the nature and scope of responsibilities of areas in educational administration. Designed to serve as an initial application of administrative theory for those aspiring to one of the several areas.

852C. Administration of Educational Institutions: Instructional Supervision
(ED 852C., EAC 852C.) Fall, Winter, Spring, Summer. 3(3-0) Twelve graduate credits in Education including EAD 851A, EAD 851B or approval of department.

Exploration of the nature and scope of responsibilities of areas in educational administration. Designed to serve as an initial application of administrative theory for those aspiring to one of the several areas.

852D. Administration of Educational Institutions: Business Administration of Schools
(ED 852D., EAC 852D.) Winter, Summer. 3(3-0) Twelve graduate credits in Education including EAD 851A, EAD 851B or approval of department.

Exploration of the nature and scope of responsibilities of areas in educational administration. Designed to serve as an initial application of administrative theory for those aspiring to one of the several areas.

852E. Administration of Educational Institutions: Middle School Administration
(ED 852E., EAC 852E.) Winter, Summer. 3(3-0) Twelve graduate credits in Education including EAD 851A, EAD 851B or approval of department.

Exploration of the nature and scope of responsibilities of areas in educational administration. Designed to serve as an initial application of administrative theory for those aspiring to one of the several areas. Organization and administrative aspects of middle schools. Emphasis on basic characteristics of a middle school and how the administrator implements these characteristics. Research on middle schools studied.

852F. Administration of Educational Institutions: The Principal and Individualized Instruction
(ED 852F., EAC 852F.) Summer. 3(3-0)

Exploration of the nature and scope of responsibilities of areas in educational administration. Designed to serve as an initial application of administrative theory for those aspiring to one of the several areas. Role of the principal in implementing administrative-instructional strategies in individualizing instruction including decision making, teaming strategies, home-school community relations, instructional programming, and differentiated staffing.

852G. Foundations of Educational Law
(ED 850A., EAC 852G.) Winter, Summer. 3(3-0) Graduate students.

Fundamentals of educational law, oriented particularly towards the needs of teachers to understand legal issues of governance, teaching and student-related relationships.

853A. Principles of Guidance and Personnel Services
(ED 815B., EAC 853A.) Fall, Winter, Spring, Summer. 3(3-0)

Survey of guidance services and their application in educational settings—elementary and secondary. Introduction to the field of pupil personnel work in schools. Practical guidance problems are considered.

853B. Procedures in Guidance: Counseling and Guidance in the Classroom
(ED 816B., EAC 853B.) Fall, Winter. 3(3-0) EAD 853A or approval of department.

Examination of factors underlying counseling activities of teachers and administrators. Basic principles, methods and techniques related to diagnosing, interviewing, consulting and referring counselees for special assistance are included.

853C. Administration of Educational Programs: Administration of Pupil Personnel and Guidance Programs
(ED 853C., EAC 853C.) Spring, Summer. 3(3-0) EAD 853A.

Designed to promote the study of application of theory and research to specialized program areas. Persons will normally select the section allied to their major program area.

853D. Procedures in Guidance: Practice in Group Counseling Techniques
(ED 816C., EAC 853D.) Winter, Summer. 3(3-0) EAD 853B.

Emphasis upon development of counseling skills through analyzing and leading small groups. Students participate in a group to examine in depth their own self-image and motives. Didactic content is related to experiences in the group.

855. Research in Educational Administration
(ED 855., EAC 855.) Fall, Winter, Spring, Summer. 3(3-0) EAD 851A, EAD 851B, CEP 803.

The identification of an individual research problem and the application of principles and techniques of educational research in seeking a solution to the problem.

860. Adult Education: A General Survey
(ED 822B., EAC 860.) Fall, Spring, Summer. 3(2-2) Approval of department.

Overview of extent, origins, forms, purposes, content, sponsors, methods and guiding theories of continuing education and its significance for individuals, institutions, communities and nations.

861. Continuing Education: Learning Theory and Program Development
(ED 828C., EAC 861.) Winter, Summer. 3(2-2) Twelve credits in Education, approval of department.

Theories of adult learning and community development, their implications for design and management of continuing education, and alternative methods for integrating social and physical environments, materials, media and personnel to increase knowledge and enhance personal and social maturity.

862. Seminar: Continuing Education Leadership in Local Communities
(ED 887., EAC 862.) Fall, Winter, Spring, Summer. 3(3-0) May reenroll for a maximum of 6 credits. Majors or approval of department.

Formal and non-formal community education for adults. Administration, agency cooperation, accountability, ethical and political concerns, managing controversy, and balancing objective study with advocacy in programs of personal and community development.

868. Non-Formal Education for Rural Development
(ED 870., EAC 868.) Fall. 3(3-0)

General principles relating non-formal education and rural development. Comparison of non-formal, extension, continuing education systems in African, Asian, American, European rural societies; impact on continuity and change in rural social systems.

869A. Career Education
(ED 829A., EAC 869A.) Fall, Summer. 3(3-0)

Historical background, curricular implications and instructional strategies related to kindergarten through adult career education programs. Program content and organization for developing awareness, exploration, decision making and planning skills.

869B. Procedures in Guidance: Career Development Services
(ED 816A., EAC 869B.) Winter, Summer. 3(3-0) EAD 853A; or concurrently.

Analysis of group and individual methods providing information related to career planning, educational opportunities, and person-social concerns. Utilization of information from placement agencies, follow-up studies, and community surveys in curriculum revision is stressed.

870A. U. S. Society and Higher Education
(ED 828F., EAC 870A.) Fall, Spring. 3(3-0) Approval of department.

The U. S. society and its relationship to higher education with emphasis on the current status and future of post secondary education in the U.S.

870B. Historical and Comparative Foundations of Education: Higher Education in the United States
(ED 804B., EAC 870B.) Winter, Summer. 3(3-0) Approval of department.

Development of higher education in the United States and its foreign antecedents. Survey of higher education today with attention to purposes, curriculum, organization, financing, and the major issues in these areas. Attention is also given to a world view of higher education with special focus upon the influences of United States higher education in foreign countries.

870C. Political Issues in American Higher Education
(ED 806A., EAC 870C.) Fall. 3(3-0) Graduate students in College and University Administration or approval of instructor.

Current political power and decision-making issues in higher education. Emphasis given to the role of the educator in the legislative process and techniques for improving governmental relations.

870D. Contemporary Issues in American Higher Education Administration
(ED 807., EAC 870D.) Winter. 3(3-0)
Graduate students in College and University Administration or approval of instructor.
External and internal demands and stresses facing American higher education. How administrators should respond to critical issues and problems.

870E. Community College
(ED 822A., EAC 870E.) Fall, Spring. 3(3-0) Approval of department.
Purposes, functions, and offerings of the community college.

870F. The American College Student
(ED 876., EAC 870F.) Fall, Winter, Summer. 3(3-0) Students in graduate degree programs or approval of department.
Analysis of research data, theory, hypotheses and strategies regarding the nature of the college student and learning environment.

870G. Student Affairs Administration in Higher Education
(ED 815C., EAC 870G.) Fall. 3(3-0) Approval of instructor.
Overview of student personnel services in colleges and universities. Philosophy, organization, and administration of the personnel program at this level and of specific services provided. Opportunity to visit and study college personnel programs.

870H. Problems of the Professional in Higher Education Administration: Men and Women
(ED 806., EAC 870H.) Spring. 3(3-0)
Graduate students in College and University Administration or approval of instructor.
Presents academic, administrative, legal, sociological and psychological factors which affect members of both sexes in the fields of teaching and administration.

871A. Budgeting in Higher Education
(EAC 871A.) Fall, Spring, Summer. 3(3-0) Approval of instructor.
Principles, practices, and problems related to budgeting in colleges and universities.

872A. Principles and Problems of Instruction in Higher Education
(ED 828E., EAC 872A.) Fall, Winter, Spring, Summer. 3(3-0) Graduate students in College and University Administration or approval of instructor.
Instructional problems in the various areas of higher education with emphasis on common principles underlying each of them.

873A. Student Development and Student Services I
(ED 873., EAC 873A.) Fall. 3(3-0)
Graduate students with Student Affairs Emphasis or approval of instructor.
History, development, philosophy, organization and administration of college student personnel as a profession. Emphasis upon the college student as an individual and a study of services, programs and staff skills needed to provide for growth, needs and development.

873B. Student Development and Student Services II
(ED 874., EAC 873B.) Winter. 3(3-0)
Graduate students with Student Affairs Emphasis or approval of instructor.
Emphasis upon the student as a member of groups; peer and group influence and behavior; student organizations and group activities; services, strategies and staff skills for conducting such programs.

873C. Student Development and Student Services III
(ED 875., EAC 873C.) Spring. 3(3-0)
Graduate students with Student Affairs Emphasis or approval of instructor.
Study of living and learning environments and related staff skills, facilities and programs which affect student behavior and development; examination of personal qualities, professional organizations and other factors associated with being a professional person.

874A. Dynamics of Life Transitions
(EAC 874A.) Fall, Spring. 3(3-0)
Graduate students or approval of instructor.
Students explore stages, psychosexual conflicts, and strategies for managing career related transitions with particular emphasis on implications for staff and student development in educational organizations.

874B. Transactive Process in Organizational Settings
(EAC 874B.) Winter. 3(3-0) EAD 874A or approval of instructor.
Students identify and analyse personal, professional and organizational variables which affect transactions within organizations in educational settings.

874C. Designing Developmental Activities
(EAC 874C.) Spring. 3(3-0) EAD 874B or approval of instructor.
Students will explore staff development activities and their adaptation to the needs of a variety of clientele. Alternative approaches to staff development programming.

876A. Practicum Experience in Student Affairs Administration
(ED 876A., EAC 876A.) Fall, Winter, Spring, Summer. 2(1-5) May reenroll for a maximum of 8 credits. Graduate students with Student Affairs Emphasis only.
Observation and participation in on and off-campus offices and agencies related to the student's major field of study.

878A. Independent Research in Higher Education
(ED 878., EAC 878A.) Fall, Winter, Spring, Summer. 2 to 6 credits. May reenroll for a maximum of 9 credits. Master's students in College and University Administration. CEP 803.
Problems and practices in Higher Education Administration. Development of research prospectus, review of significant literature, conduct of research under supervision, and presentation of findings and conclusions.

881. Workshops in Administration and Curriculum
(ED 881., EAC 881.) Fall, Winter, Spring, Summer. 1 to 6 credits. May reenroll for a maximum of 6 credits. Approval of department.
Laboratory approach which provides opportunities for experienced educational personnel to concentrate their study on common administrative and supervisory problems.

882. Seminars in Administration and Curriculum
(ED 882., EAC 882.) Fall, Winter, Spring, Summer. 1 to 9 credits. May reenroll for a maximum of 15 credits. Approval of department.
Seminars in the various fields of emphasis.

883. Readings and Independent Study in Administration and Curriculum
(ED 883., EAC 883.) Fall, Winter, Spring, Summer. 1 to 6 credits. May reenroll for a maximum of 15 credits. Approval of department.
Study on an individual or group basis in the various fields of emphasis.

884. Laboratory and Field Experience in Administration and Curriculum
(ED 884., EAC 884.) Fall, Winter, Spring, Summer. 1 to 9 credits. May reenroll for a maximum of 15 credits. Approval of department.
Supervised graduate practicums, observations, internships, and externships in the various areas of emphasis.

899. Master's Thesis Research
(ED 899., EAC 899.) Fall, Winter, Spring, Summer. 2 to 12 credits. May reenroll for a maximum of 12 credits. Approval of department.

950. Theory and Practice of Administration
(ED 950., EAC 950.) Fall, Winter, Spring, Summer. 3(3-0) Approval of department.

Administrative process as exemplified in agencies such as schools, colleges, universities, government agencies, business enterprises, and voluntary organizations. Relation of administrative theory to the practice of administration and to scientific knowledge of human relations in a free society.

951A. Community Relations
(ED 951., EAC 951A.) Winter, Spring, Summer. 3(3-0) Approval of department.
Communications strategies and problems for administrator of educational institutions. Problem identification and analysis are stressed.

951B. Educational Finance
(ED 952., EAC 951B.) Fall, Summer. 3(3-0) Approval of department.
Current issues concerning financing public elementary and secondary education in the United States. Current and historical analysis of patterns of revenue and sources and expenditures.

951C. Education Law
(ED 953., EAC 951C.) Fall, Winter, Summer. 3(3-0) Approval of department.
Designed to discover general legal principles and examine laws and lawmaking agencies that affect educators and educational institutions and appropriate means to influence law development.

951D. Planning Facility Learning Environments
(ED 954., EAC 951D.) Spring. 3(3-0) Approval of department.
A multi-discipline approach to the learning environment of the individual through life-long educational experiences. Role of the educator and specialists in facilitating the educational program. Sites, building and equipment.

951E. Educational Personnel Administration
(ED 955., EAC 951E.) Fall, Spring, Summer. 3(3-0) Approval of department.
Recruitment, selection, orientation, training, salary and fringe benefits, welfare, morale, negotiations, etc., to assist the administrator to function more effectively with personnel.

**Descriptions — Educational Administration
of
Courses**

951F. Planning Change in Educational Organizations
(ED 956., EAC 951F.) Winter, Summer. 3(3-0) Approval of instructor.

Analysis of research, theory and practice of the change process in educational organizations. Planned change concepts and methods are examined and tested by laboratory and field experiences.

951G. Using Standardized Tests for Decision Making
(ED 959., EAC 951G.) Fall, Spring. 3(3-0) Approval of department.

School administrative decision making based on information yielded by standardized tests. Participants will also engage in private consultations with the instructor concerning system or building data.

951H. Field Research Methods in Education
(ED 961., T E 920., EAC 951H.) Spring. 3(3-0)

Methods of interview, participant observation or observation for carrying on educational research.

951I. Professional Lectures in Educational Administration.
(ED 978., EAC 951I.) Fall. 3(3-0)

Graduate students in Educational Administration or approval of department.

Lectures by faculty in Educational Administration in individual faculty research and service interests, exploration of recent research and other scholarly publications.

951J. Conflict Management in Educational Administration
Fall, Spring. 3(3-0) Approval of department.

Theories, rationales, and strategies of conflict management. Managing conflict situations in educational environments.

952A. Externship in Educational Administration
(ED 971., EAC 952A.) Fall, Winter, Spring. 3 credits. May reenroll for a maximum of 27 credits. Present or past position as an educational administrator.

Discussion of participants' current administrative problems and solution strategies, faculty visits to participants' schools and speakers on issues in educational administration.

952B. Multidisciplinary Seminar in Educational Administration
(ED 972., EAC 952B.) Fall, Winter, Spring. 3 credits. May reenroll for a maximum of 18 credits. 9 credits of EAD 952A.

Discussion of generic problems and issues in administration identified and interpreted through selected readings and speakers from the several behavioral sciences.

960. Seminar: Continuing Education in Higher Education Institutions
(ED 987B., EAC 960.) Winter. 3(3-0) May reenroll for a maximum of 6 credits. Majors or approval of department.

Patterns, problems, and potential for continuing education in two and four year colleges. Problems of governance, reward system, leadership roles, etc.

970A. The Law of Higher Education
(ED 980., EAC 970A.) Fall, Spring. 3(3-0) Graduate students in College and University Administration; others, approval of instructor.

Principles and cases of law applied to problems of governance, management, and instruction in post-secondary educational institutions. Emphasis upon personnel and student administration and equity issues.

970B. Higher Education Finance
(EAC 970B.) Fall, Spring. 3(3-0) Admission to M.A. or Ph.D. programs in the College of Education.

Structures, processes and problems related to the financing of higher education in the United States. Emphasis on alternatives for the future.

971A. The Department in Higher Education
(ED 957., EAC 971A.) Winter. 3(3-0) Approval of instructor.

The Department as an administrative structural element of the University. The duties and responsibilities of the chairperson as they relate to the management of the Department.

971B. Management Systems in Higher Education Administration
(ED 958., EAC 971B.) Fall, Spring. 3(3-0) Graduate students in College and University Administration; others, approval of instructor.

The application of National Center for Higher Education Management Systems tools to decision making in higher education administration. Resource Requirement Prediction Model 1.6, student flow and faculty activity analysis are major tools investigated.

971C. Evaluation of Higher Education
(ED 965C., EAC 971C.) Spring. 3(3-0) Graduate students in College and University Administration, EAD 872A or approval of instructor.

Ways in which evaluation takes place in higher education; course examinations, grading, comprehensive examinations, teacher evaluation, institutional evaluation, state surveys, and regional and national studies of higher education problems.

971D. Community College Administration
(ED 979., EAC 971D.) Winter. 3(3-0) Graduate students in College and University Administration. Others, approval of instructor.

Functional areas of community college administration with emphasis upon instruction, finance and student services including the importance of local, state and federal influences.

973A. College Student Affairs Administration I
(ED 973., EAC 973A.) Fall. 3(3-0) Doctoral students in Student Affairs Emphasis. Others, approval of instructor.

Emphasis on planning, organization, financing, research, evaluation and administration for programs and services which exist principally to serve individual student needs: counseling, orientation, health, placement, financial aids, etc.

973B. College Student Affairs Administration II
(ED 974., EAC 973B.) Winter. 3(3-0) Doctoral students in Student Affairs Emphasis. Others, approval of instructor.

Student organizations and activities; student union; on and off-campus living environments. Emphasis on planning, organization, financing, research, evaluation and administration of these programs and services.

973C. College Student Affairs Administration III
(ED 975., EAC 973C.) Spring. 3(3-0) Doctoral students in Student Affairs Emphasis. Others, approval of instructor.

Analysis of student rights and responsibilities; academic freedom; regulation of student conduct; systems of governance and judicial processes; legal basis for student personnel programs and administration.

976A. Doctoral Internship in College and University Administration
(ED 991., EAC 976A.) Fall, Winter, Spring, Summer. 3(0-9) May reenroll for a maximum of 12 credits. Doctoral students in College and University Administration, approval of instructor.

Students intern in on- and off-campus offices and agencies as observers of and participants in the administration of programs particular to their major field of study.

978A. Independent Research in Higher Education Administration
(ED 940., EAC 978A.) Fall, Winter, Spring, Summer. 1 to 6 credits. May reenroll for a maximum of 6 credits. Doctoral students in College and University Administration.

Supervised and guided in-depth readings in literature and research specific to higher education administration which lead to the development of materials such as position papers, articles for publication, and grant and dissertation proposals.

982. Seminars in Administration and Curriculum
(ED 982., EAC 982.) Fall, Winter, Spring, Summer. 1 to 9 credits. May reenroll for a maximum of 15 credits. Approval of department.

Seminars in the various fields of emphasis.

983. Readings and Independent Study in Administration and Curriculum
(ED 983., EAC 983.) Fall, Winter, Spring, Summer. 1 to 6 credits. May reenroll for a maximum of 15 credits. Approval of department.

Study on an individual or group basis in the various fields of emphasis.

984. Laboratory and Field Experience in Administration and Curriculum
(ED 984., EAC 984.) Fall, Winter, Spring, Summer. 1 to 6 credits. May reenroll for a maximum of 15 credits. Approval of department.

Supervised advanced graduate practicums, observation, internships, and externships in the various areas of emphasis.

999. Doctoral Dissertation Research
(ED 999., EAC 999.) Fall, Winter, Spring, Summer. Variable credit. Approval of department.

**ELECTRICAL ENGINEERING
AND SYSTEMS SCIENCE**

College of Engineering

Electrical Engineering E E

230. Digital Logic Fundamentals
Fall, Winter, Spring, Summer. 4(4-0)
CPS 120 or CPS 251.

Boolean algebra; combinational logic and minimization; sequential system fundamentals and components; arithmetic operations and devices; memory devices and ensembles; data conversion principles; digital integrated circuits; practical engineering design problems.