841C. History of Economic Thought: Modern
Spring. 3(3-0)
Development of marginalism, general equilibrium theory, employment theory, and mathematical economics.

850. The Development of Economic Institutions
Fall. 3(3-0) EC 430 or approval of department.

851. The Economics of Secular Change
Winter. 3(3-0) EC 324, EC 326 or approval of department.
Empirical studies of long-run economic trends and a consideration of alternative hypotheses explaining these trends including classical Marxism, Harrod-Domar, and other general theories of economic development. Population growth, technological change, capital formation, occupational distribution, urbanization, and international trade.

852. Economic Problems of Underdeveloped Areas
Spring. 3(3-0) EC 324, EC 326 or approval of department.
Overcoming problems relating to early stages of economic development; investment priorities, mobilizing savings, balance of payment considerations; and policies and programs of various types.

855. The Industrial Revolution in Europe
Winter of even-numbered years. 3(3-0) EC 318, EC 324. Interdepartmental with the Department of History.
The preconditions that led to the momentous changes in agriculture and industry in Europe from 1700-1914.

857A. Wage Theory I
Fall. 3(3-0) EC 324, EC 326 or approval of department. Interdepartmental with the School of Labor and Industrial Relations.
Advanced analysis of: theories of wage determination; labor market research; economic effects of collective bargaining upon the national wage structure, output, employment, distribution of national income, price level, nature and effects of government wage policies.

857B. Wage Theory II
Winter. 3(3-0) EC 324, EC 326 or approval of department.
Advanced analysis of education, on-the-job training, family background, and discrimination as determinants of earnings. Causes and measurement of inequality and social mobility. Macroeconomic view of labor market.

858. Collective Bargaining
Fall, Winter, Spring. 3(3-0) EC 305 or approval of department. Open to graduate students in economics and related fields such as labor and industrial relations, psychology, sociology, anthropology, political science, business, and history. Interdepartmental with and administered by the School of Labor and Industrial Relations.
Problems and issues in the administration and negotiation of collective bargaining agreements; includes both economic and noneconomic aspects of industrial relations policies and practices.

876. Statistical Inference in Economics I
Fall. 3(3-0) EC 812A or EC 805A; SST 443 or SST 865; or approval of department.
Interdepartmental with the departments of Agricultural Economics, and Statistics and Probability.

877. Statistical Inference in Economics II
Winter. 3(3-0) EC 876 or approval of department. Interdepartmental with the departments of Agricultural Economics, and Statistics and Probability.

878. Statistical Inference in Economics III
Spring. 3(3-0) EC 877 or approval of department. Interdepartmental with the departments of Agricultural Economics, and Statistics and Probability.
Validation and application of dynamic econometric models. Bayesian approach to estimation problems. Recent developments in econometric methods and in applied econometric research.

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) 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 825 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. 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.

911. Public Program Analysis
Spring. 3(3-0) EC 863, EC 805A, EC 805B, or approval of department. Interdepartmental with the departments of Agricultural Economics and Resource Development. Administered by the Department of Agricultural Economics.
Policy aspects of nonmarket value estimation, shadow pricing, time preference, and risk analysis applied to systematic choice of agricultural, natural and human resource regulatory and public investment programs.

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.

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

EDUCATION
See Counseling, Educational Psychology and Special Education; Educational Administration; Health Education, Counseling Psychology and Human Performance; and Teacher Education.

EDUCATIONAL ADMINISTRATION EAD
( Name changed effective July 1, 1984. Formerly Department of Administration and Curriculum.)

College of Education 415A. Leadership Training (EAD 415) Fall, Winter, Spring. 2(1-2)
Prepares students for leadership roles and responsibilities through the development of skills and techniques consistent with principles of our democracy.
Description — Educational Administration of Courses

415B. Topics Leadership Training
Fall, Winter, Spring. 2(1-2) EAD 415A.
Leadership roles and responsibilities with specialized populations. Topics include women, minorities, and fraternal organizations.

805A. Educational Development Planning: Basic Concepts
Winter. 3(3-0) Approval of department.
Basic concepts of economics, 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
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 issues on science and the appropriate technology for applying scientific knowledge to developmental problems in specific socio-cultural settings.

806. Education Through Cooperative Extension
Winter. 3(3-0) AEE 828 or EAD 880 or approval of department. Interdepartmental with and administered by the Department of Agricultural and Extension Education.
Cooperative extension programs in the United States with emphasis on Michigan model: philosophy, history, scope, organizational structure, programs and methods.

810. Evaluating School Effectiveness
Winter. 3(3-0) CEP 808 or approval of instructor. Interdepartmental with and administered by the Department of Counseling, Educational Psychology and Special Education.
Approaches to evaluating school effectiveness. Recent research on school effectiveness. Alternative strategies for examining measures of student achievement and school characteristics.

810E. Instructional Simulation
(EAD 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 810J.) 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
Winter. 3(3-0) T E 810A, T E 810C or EAD 880.
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 enroll 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 research. Social field research topics and methodologies viewed from the perspective of relevant social science and humanities disciplines associated with the African Studies Center.

850. The Teacher and Administrative Leadership
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
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
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.

851C. Seminar: Educational Leadership and Organizational Climate
Winter. 3 credits. Approval of instructor.
Exploration of dimensions and alternative ways to measure educational leadership and organizational climate. Use of existing instruments for diagnostic or research projects.

851D. Project Planning Evaluation and Implementation
Fall. 3(3-0) Approval of instructor.
Educational projects as an organizational strategy for developing and supporting innovation and change. Emphasis on planning evaluation and management techniques for project development and implementation.

852A. Administration of Educational Institutions: Elementary School Administration
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.

852B. Administration of Educational Institutions: Secondary School Administration
Fall, Winter, Spring, Summer. 3(3-0) Twelve graduate credits in Education including EAD 851A, EAD 851B or approval of department.
Interdepartmental with African Languages and the departments of Anthropology, Geography, History, Political Science, and Sociology. Administered by the Department of Anthropology.
African-related research. Social field research topics and methodologies viewed from the perspective of relevant social science and humanities disciplines associated with the African Studies Center.

852C. Administration of Educational Institutions: Instructional Supervision
Fall, Winter, Spring, Summer. 3(3-0) Twelve graduate credits in Education including EAD 851A, EAD 851B or approval of department.
Interdepartmental with AfricanLanguages and the departments of Anthropology, Geography, History, Political Science, and Sociology. Administered by the Department of Anthropology.
African-related research. Social field research topics and methodologies viewed from the perspective of relevant social science and humanities disciplines associated with the African Studies Center.

852D. Administration of Educational Institutions: Business Administration of Schools
Winter, Summer. 3(3-0) Twelve graduate credits in Education including EAD 851A, EAD 851B or approval of department.
Interdepartmental with African Languages and the departments of Anthropology, Geography, History, Political Science, and Sociology. Administered by the Department of Anthropology.
African-related research. Social field research topics and methodologies viewed from the perspective of relevant social science and humanities disciplines associated with the African Studies Center.

852E. Administration of Educational Institutions: Middle School Administration
Winter, Summer. 3(3-0) Twelve graduate credits in Education including EAD 851A, EAD 851B or approval of department.
Interdepartmental with African Languages and the departments of Anthropology, Geography, History, Political Science, and Sociology. Administered by the Department of Anthropology.
African-related research. Social field research topics and methodologies viewed from the perspective of relevant social science and humanities disciplines associated with the African Studies Center.

852F. Administration of Educational Institutions: The Principal and Individualized Instruction
Summer. 3(3-0) Approval of department.
Interdepartmental with African Languages and the departments of Anthropology, Geography, History, Political Science, and Sociology. Administered by the Department of Anthropology.
African-related research. Social field research topics and methodologies viewed from the perspective of relevant social science and humanities disciplines associated with the African Studies Center.

852G. Foundations of Educational Law
Winter, Summer. 3(3-0) Approval of department.
Interdepartmental with African Languages and the departments of Anthropology, Geography, History, Political Science, and Sociology. Administered by the Department of Anthropology.
African-related research. Social field research topics and methodologies viewed from the perspective of relevant social science and humanities disciplines associated with the African Studies Center.

A-64
85A. Procedures in Guidance: Counseling and Guidance in the Classroom
Fall, Winter. 3(3-0) 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.

85B. Procedures in Guidance: Counseling and Guidance in the Classroom
Fall, Winter. 3(3-0) 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.

85C. Political Issues in American Higher Education
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.

85D. Contemporary Issues in American Higher Education
Fall. 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.

85E. Community College
Fall, Spring. 3(3-0) Approval of department.
Courses, sponsors, methods and guiding theories of community education and its significance for individuals, institutions and communities.

85F. The American College Student
Fall, Winter. 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.

85G. Student Affairs Administration in Higher Education
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.

85H. Institutional Advancement
Spring. 3(3-0) Approval of department.
Administration of institutional advancement programs, marketing higher education; governmental relations, alumni administration, development, institutional relations, and executive management.

85I. 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.

86A. Seminar in Adult Literacy
Winter. 3(3-0) Graduate student.

86B. Teaching Basic Education
Fall. 3(3-0) Graduate student.
Strategies for teaching adults to read, write and compute. Adult basic education student characteristics; program characteristics; content, organization and policy issues.

86C. Developing Interpersonal Skills in Working with Adults
Spring, Summer. 3(3-0) Graduate student.
Processes, procedures, and underlying theories inherent in the development of effective inter-personal skills in working with adults, either as individuals or in group situations.

86D. Non-Formal Education for Rural Development
Fall. 3(3-0) Approval of department.
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.

86E. Career Education
Fall. 3(3-0) Approval of department.
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.

86F. Procedures in Guidance: Career Development Service
Winter, Summer. 3(3-0) Approval of department.
Analysis of group and individual methods providing information related to career planning, educational opportunities, and personal-social concerns. Utilization of information from placement agencies, follow-up studies, and community surveys in curriculum revision is stressed.

86G. Employment and Training
Winter. 3(3-0) Graduate student.
An analysis of education and training programs in business and industry, Training cycle, adult learners in the work place and competencies of trainers.

86H. U. S. Society and Higher Education
Fall. 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.

86I. Historical and Comparative Foundations of Education: Higher Education in the United States
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 worldwide view of higher education with special focus upon the influences of United States higher education in foreign countries.

86J. Student Development and Student Services
Fall, Winter. 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
Winter. 3(3-0) Graduate students with
Student Affairs Emphasis or approval of instruc-
tor. Emphasis upon the student as a member of
group, peer and group influence and behavior;
student organizations and group activities; serv-
ices, strategies and staff skills for conducting
such programs.

873C. Student Development and Student Services III
Spring. 3(3-0) Graduate students with
Student Affairs Emphasis or approval of instruc-
tor. Study of living and learning environments and
related staff skills, facilities and programs which affect
student behavior and development; exam-
ination of personal qualities, professional organi-
azations 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, psychosocial conflicts,
and strategies for managing career related transi-
tions with particular emphasis on implications
for staff and student development in educational
organizations.

874B. Transaction Process in
Organizational Settings
(EAC 874B.) Winter. 3(3-0) EAD 874A
or approval of instructor.
Students identify and analyze personal, profes-
sional and organizational variables which affect
transactional 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 activi-
ties and their adaptation to the needs of a variety
of clientele. Alternative approaches to staff
development programming.

876A. Practicum Experience in Student
Affairs Administration
Fall, Winter, Spring, 3(3-0)
May reenroll for a maximum of 6 credits. Gradu-
ate students with Student Affairs Emphasis only.
Observation and participation in on and off-
campus offices and agencies related to the stu-
dent's major field of study.

878A. Independent Research in Higher
Education
Fall, Winter, Spring, 2 to 6
credits. May reenroll for a maximum of 9 credits.
Master's students in College and University
Administration. CKP 803:
Problems and practices in Higher Education Admin-
istration. Development of research pro-
spectus, review of significant literature, con-
duct of research under supervision, and presenta-
tion of findings and conclusions.

881. Workshops in Educational
Administration
Fall, Winter, Spring. 1 to 6
credits. May reenroll for a maximum of 6 credits.
Approval of department
Laboratory approach which provides oppor-
tunities for experienced educational personnel to
concentrate their study on common administra-
tive and supervisory problems.

882. Seminars in Educational
Administration (MTG)
Fall, Winter, Spring, Summer. 3(3-0)
May reenroll for a maximum of 15 credits.
Approval of department.
Seminars in the various fields of emphasis in K-
12 administration, college and university
administration and adult and continuing educa-
tion.

883. Readings and Independent Study
in Educational Administration
Fall, Winter, Spring, Summer. 1 to 6
credits. May reenroll for a maximum of 15 cred-
its. Approval of department.
Study on an individual or group basis in the vari-
ous fields of emphasis.

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

899. Master's Thesis Research
Fall, Winter, Spring. 2 to 12
credits. May reenroll for a maximum of 12 cred-
its. Approval of department.

916. Staff Development and the
Realities of Teaching
Fall. 3(3-0) Doctoral Prosemina
Sequence in Teacher Education or approval of
instructor. Interdepartmental with and adminis-
tered by the Department of Teacher Educa-
tion.
Elements in decisions about staff development.
Context for inservice teacher learning. Compa-
nion of knowledge sources in teacher develop-
ment.

950. Theory and Practice of
Administration
Fall, Winter, Spring. 3(3-0)
Approval of department.
Administrative process as exemplified in agen-
cies such as school, colleges, universities, gov-
ernment agencies, business enterprises, and
voluntary organizations. Relation of adminis-
tration theory to the practice of administration
and to scientific knowledge of human relations
in a free society.

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

951B. Educational Finance
Fall, Summer. 3(3-0) Approval of
department.
Current issues concerning financing public ele-
mentary and secondary education in the United
States. Current and historical analysis of pat-
terns of revenue and sources and expenditures.

951C. Education Law
Fall, Winter, Summer. 3(3-0)
Approval of department.
Designed to discuss general legal principles and
legalized laws and laws by and legislative agencies
that affect educators and educational institutions
and appropriate means to influence law develop-
ment.

951D. Planning Facility Learning
Environments
Spring. 3(3-0) Approval of depart-
ment.
A multi-discipline approach to the learning envi-
ronment of the individual through life-long edu-
cational experiences. Role of the educator and
specialists in facilitating the educational pro-
gram. Sites, building and equipment.

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

951F. Planning Change in Educational
Organizations
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 exam-
ined and tested by laboratory and field experi-
ences.

951H. Field Research Methods in
Education
Spring. 3(3-0)
Methods of interview, participant observation or
observation for carrying on educational research.

951I. Professional Lectures in
Educational Administration,
Fall. 3(3-0) Graduate students in Edu-
cational Administration or approval of
instructor.
Lectures by faculty in Educational Administra-
tion 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, rational, and strategies of conflict
management. Managing conflict situations in
educational environments.

952A. Externship in Educational
Administration
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 administra-
tive problems and solution strategies, faculty vis-
its to participants' schools and speakers on issues
in educational administration.

952B. Multidisciplinary Seminar in
Educational Administration
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
Winter. 3(3-0) May reenroll for a maxi-
num of 6 credits. Majors or approval of depart-
ment.
Patterns, problems, and potential for continuing
education in two and four year colleges. Prob-
lems of governance, reward system, leadership
roles, etc.
970A. The Law of Higher Education
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
Winter. 3(3-0) Approval of instructor.
The Department is 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
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. Resources Requirement Prediction Model 1.6, student flow and faculty activity analysis are major tools investigated.

971C. Evaluation of Higher Education
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 evaluations, grading, comprehensive examinations, teacher evaluation, institutional evaluation, state surveys, and regional and national studies of higher education problems.

971D. Community College Administration
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
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
Spring. 3(3-0) Doctoral students in Student Affairs Emphasis. Others, approval of instructor.
Student organizations and activities; student unions; 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
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
Fall, Winter, Spring, Summer. 3(0-9) May enroll 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
Fall, Winter, Spring. 1 to 6 credits. May enroll 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
Fall, Winter, Spring. 1 to 9 credits. May enroll for a maximum of 15 credits. Approval of department.
Seminars in the various fields of emphasis.

983. Readings and Independent Study in Educational Administration
Fall, Winter, Spring. 1 to 6 credits. May enroll 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 Educational Administration
Fall, Winter, Spring. 1 to 6 credits. May enroll for a maximum of 15 credits. Approval of department.
Supervised advanced graduate practitioners, observation, internships, and externships in the various areas of emphasis.

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

ELECTRICAL ENGINEERING AND SYSTEMS SCIENCE

College of Engineering

Electrical Engineering

230. Digital Logic Fundamentals
Fall, Winter, Spring, Summer. 4(4-0) E E 312 or E E 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.

231. Computer Organization and Usage
Fall, Winter, Spring. 4(4-0) E E 230.
Computer structure and machine language; microprocessors; computer bus; program segmentation and linkage; microcomputer case study; survey of applications in science and engineering.

300. Electric Circuits I
Fall. 4(4-0) MTH 113.

301. Electric Circuits II
Winter. Spring. 3(3-0) E E 300, MTH 214.
Sinusoidal steady state response. Average power and rms concepts, complex frequency response. Two-port networks. Transfer functions.

302. Basic Electronic Circuits
Spring, Summer. 4(4-0) E E 301, MTH 215.
VOLT-ampere characteristics of diodes and transistors. Voltage, current and power amplification. Stability, transient and high frequency effects. Feedback, oscillators and operational amplifiers.

303. Electronics Laboratory I
Winter. Spring. 1(0-3) E E 306; E E 301 concurrently.
Electronic test equipment and measurement fundamentals. Experimental verification of topics covered in E E 300 and E E 301. Computer-aided circuit analysis and design.

304. Electronics Laboratory II
Fall. 1(0-3) E E 302.

305. Electromagnetic Fields and Waves I
Fall. Winter. 3(3-0) MTH 210, PHY 288.
Vector analysis, Electromagnetism fields; EM sources, scalar potential, Poisson's and Laplace's equations, dielectric media, capacitance, and energy storage. Boundary value problems for electrostatic fields.

306. Electromagnetic Fields and Waves II
Winter. Spring. 3(3-0) E E 305.
Electromagnetic fields. EM sources, vector potential, magnetic media, inductance; energy storage time varying fields, and Maxwell's equations; potential theory and boundary value problems.