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.

895. Graduate Reading in Economics
Fall, Winter, Spring, Summer. Variable credit.

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

900. Selected Problems in Advanced Microeconomic Theory
Fall, Winter, Spring, Summer. 3(3-0)
May re-enroll for a maximum of 12 credits. 812A, 812B, 812C; 813C.
Advanced applications of economic methodology to the analysis of household and firm behavior; risk; uncertainty, and transactions costs.

901. Selected Problems in Advanced Macroeconomic Theory
Fall, Winter, Spring, Summer. 3(3-0)
May re-enroll for a maximum of 12 credits. 813A, 813B.
Analysis of the behavior and interaction of multinational systems.

972. Methodological Approaches to Research
Research Fall, Winter, Spring, Summer. 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.

990A. Monetary Theory and Policy Workshop
Winter, Spring. 3 to 18 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 999.

990B. Industrial Organization and Public Policy Workshop
Fall, Winter, Spring. 3 to 10 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 999.

990C. Mathematical Economics and Econometrics Workshop
Fall, Winter, Spring. 3 to 10 credits. 812A, 812C; 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 999.

990D. Economic Development Workshop
Fall, Winter, Spring, Summer. 3 to 16 credits. 850, 851, 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 999.

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

EDUCATION

College of Education

101A. Exploring Elementary Teaching
Fall, Winter, Spring. 3(1-4) Special major
Emphasis on the nature of teaching in the elementary school achieved through field experience while serving as a teacher aide in an elementary classroom. Concurrent lecture sessions focus on techniques of classroom management and operation.

124. Introduction to Careers in Vocational and Practical Arts Education
Opportunities in teaching agriculture, business, home economics or industrial education and in closely related fields; analysis of student's potential for these fields.

A. AGRICULTURE
Fall, Winter, Spring, Summer. 2(2-0) Interdepartmental with Agriculture.

D. INDUSTRIAL ARTS
Winter and Fall of even-numbered years, Spring of odd-numbered years. 3(2-0)

141A. General Industrial Arts
Winter and Fall of odd-numbered years, Spring of even-numbered years. 3(0-6)
Approval of department.
Introductory experiences in all major areas of industrial arts. Organized under a comprehensive general shop organization similar to that utilized in the modern secondary school.

141B. General Woodwork
Winter and Fall of odd-numbered years, Spring of even-numbered years. 3(0-6)
Approval of department.
Handwork, patternwork, carpentry, introductory machine-shop finishing. Designed to exemplify in both organization and equipment, desirable practices in today's secondary schools.

200. Individual and the School
Fall, Winter, Spring, Summer. 5(3-2)
Sophomores. Must be admitted to a teacher education program. Major psychological factors in the school learning-teaching situation; concepts in human development related to problems in the school situation; teacher's role in motivation, conceptual learning, problem solving, and the development of emotional behavior, attitudes and values; learning of skills, retentions and transfer, and measurement of student abilities and achievement.

200A. Educational Psychology
Spring of odd-numbered years. 3(3-0)
Approval of department.
Same goals as Education 200, but assumes a background in general psychology.

202B. Workshops in Secondary Education
Winter. 2(2-0) May not receive credit for 202A and 450. 202B.
Students select from a variety of single session workshops focusing on psychological and sociological aspects of teaching in secondary schools. Approved through Winter term 1979.

202C. Alternative Secondary School Structures
Spring. 1 credit. May not receive credit for 202A and 450. 202C.
On-site examination of a variety of secondary school organizational patterns, together with on-campus analysis of underlying theories of social organization and curricula constructions. Approved through Spring term 1979.

241A. Advanced Woodwork
Winter and Fall of even-numbered years, Spring of odd-numbered years. 3(0-6)
141B or approval of department.
Safe operation of woodworking machines in home and school shop. Care and maintenance of shop tools and equipment.

241B. General Metalwork
Winter and Fall of odd-numbered years, Spring of even-numbered years. 3(0-6)
Approval of department.
Bench metal, sheet metal, forging, welding, plating, casting, and machining. Designed to exemplify desirable facilities and course organization for the modern secondary school.

241C. Industrial Arts Crafts
Winter and Fall of even-numbered years, Spring of odd-numbered years. 3(0-6)
Approval of department.
Typical crafts in outstanding public school programs of industrial arts. Work in plastics, leather, silver, aluminum, copper, metal enameling, lapidary, ceramics, and model making.

241D. Printing and Graphics
Winter and Fall of even-numbered years, Spring of odd-numbered years. 3(0-6)
Approval of department.
Hand composition, press work, printing, book-binding, block printing, plate making, silk screen work, and photography. Designed to exemplify a desirable approach to the work of this area in the modern secondary school.

302A. Teaching Skills Laboratory
Fall. 2(2-1) May not receive credit for 320A and 450. 292C.
Competency based instruction and field experience in selected generic teaching skills, including classroom management, secondary reading, data analysis, growth and sociometric techniques, instructional planning, assessment, and evaluation. Approved through Fall term 1978.
302B. Laboratory in Ethnic Values of Adolescents
Winter. 10(5) May not receive credit for 202B and 436. 092A.
Laboratory setting focusing on ethnic values, beliefs and attitudes and their impact on public
secondary schools. Participants will include uni-
versity students, high school and middle school
minority and ethnic students. Approved through

302C. Clinical Field Experience in Secondary Teaching
Spring. 12 credits. May not receive credit for
302B and 436. 092B.
Clinical experience in secondary teaching. Su-
ervised by subject specialists, SEPP program
staff, and selected public school personnel. Is
equivalent of 436. Student Teaching, in regular
secondary education program, but is coupled
with 302B and 302C into a one year integrated
sequence of experiences under common super-

321A. Curriculum Methods and Materials—Elementary
Education
Fall, Winter, Spring, Summer. 3(1-7)
Juniors, 101A, 200. Must be taken concurrently
with or prior to courses in 325 series.
Bases of curriculum in
reading, language arts, and social studies; adap-
tation of principles to methods and materials of
teaching in the elementary middle
school.

325A. Methods of Teaching Reading in the Elementary School
Fall, Winter, Spring, Summer. 3(3-0)
200, Juniors.
Methods and materials of instruction of reading at
elementary level. Analysis of learning and teach-
ing problems, and study of concrete ma-
terials and classroom attack. Consideration of
practical teachings of research and progressive theory
on current practices.

325B. Teaching of Language Arts in Elementary Grades
Fall, Winter, Spring, Summer. 3(3-0)
200, Juniors.
Course to acquaint prospective elementary teach-
ers with content material and methods in lan-
guage arts for grades below the seventh. Stu-
dents also given opportunities to acquire skills in
manuscript and blackboard writing.

325C. Critical Reading and Children's Literature
Fall, Winter, Spring, Summer. 3(3-0)
200, Juniors.
Development of strategies for helping children to
develop critical reading skills through literary
experience.

325D. Teaching of Social Studies in Elementary Grades
Fall, Winter, Spring, Summer. 3(3-0)
200, Juniors; three terms of social science.
To help students develop understanding of phil-
osophy and aims of social studies movement in
elementary schools, and ability to further such
aims through familiarity with a variety of mate-
rials, knowledge of social studies subject matter,
and competence in using a variety of methods.

325E. Teaching of Mathematics in Elementary Grades
Fall, Winter, Spring, Summer. 3(3-0)
200, Juniors; MTH 201.
Prepares methods and materials for teaching mathematics in the elementary school. Methods
and techniques of presenting mathematics con-
tent meaningfully to elementary pupils will be
illustrated.

325F. Teaching Science in the Elementary and Middle School
Fall, Winter, Spring, Summer. 3(2-2)
200, Juniors; three terms of natural science.
Extends the science education background of
perspective elementary and middle school teach-
ers. Emphasis is placed upon methods and
materials for teaching science at the elementary
and middle school levels.

325G. School Music Instrumental Methods
Fall. 3(3-3) Instrumental music
major.
Instrumental instruction program at elementary
class level.

325H. School Music Vocal Methods
Fall. 4(3-3) Approval of the Depart-
ment of Music.
Basic instructional program in primary and
intermediate grades.

327. Methods of Teaching—Secondary Common Elements
Fall, Winter, Spring. 2(2-0)
200; a subject area methods course 327A to
327V concurrently.
Instructional issues common to all subject areas.
Selection of instructional techniques based on
teacher values and belief systems, learner needs
and characteristics, and sound educational principles and policies.

327A-V. Methods of Teaching—Secondary Subject Areas
Specified of classroom instruction in the various
subject matter fields. Selection of instructional
techniques based on recognized course objec-
tives, needs and characteristics of learners, and
sound educational principles and policies.
A. Agriculture
Fall, Spring. 3 credits. 200; 327 or concur-
rently.
B. Art
Fall, Winter, Spring. 3 credits. 200;
STA 303, 320, ED 327 or concurrently.
C. Business and Distributive Education
Fall, Winter, Spring. 3 credits. 200;
327 or concurrently.
D. English
Fall, Winter, Spring. 3 credits. 200;
327 or concurrently.
E. Romance Languages
Fall. 3 credits. 200, 327 or curric-
antly.
F. Health
Spring. 3 credits. 200; 327 or concur-
rently.
G. Physical Education
Fall, Winter, Spring. 3 credits. 200;
327 or concurrently.
H. History
Fall, Winter, Spring. 3 credits. 200;
327 or concurrently.
K. Home Economics
Fall, Winter, Spring. 3 credits. 200;
327 or concurrently.
L. Natural Resources, Environment-
mental Education and Earth Science
Fall, Spring. 3(3-0) for education majors;
others, approval of department.
M. Industrial Arts
Fall, Spring. 3 credits. 200; 327 or concur-
rently.
N. Mathematics
Fall, Spring. 3 credits. 200; 327 or concur-
rently.

329F. Introduction to Driver and Traffic Education
Fall, Winter, Summer. 4(3-2)
Valid driver's license. Introduction to and an
analysis of the driving task. Theory and prac-
tical application will be provided.

341A. Advanced Metalwork
Winter and Fall of even-numbered years.
Spring of odd-numbered years. 3(0-6) 241B
or approval of department.
Work in bench metal, sheet metal, forging, weld-
ing, plating, casting, machining of metals. De-
designed to provide the industrial arts teacher with
sufficient breadth and skill to enable him to
establish such a program in a secondary school.

341B. Industrial Arts Mechanics
Winter and Fall of odd-numbered years.
Spring of even-numbered years. 3(0-6) Approval
of department.
Work with small motors and internal combustion
engines, drive and transmission devices. De-
designed to exemplify desirable practice in course
organization and facilities for the modern sec-
dary school.

401. Sociology of Education
Winter, Summer. 4(4-0) SOC 241.
Interdepartmental with and administered by the
Department of Sociology.
School as a social institution, school-commuity
relations, social control of education, and struc-
ture of school society.

402A. Advanced Workshops in Secondary Education
Fall. 2(0-4) May not receive credit
for 402A and 327. 301C.
Workshops on a variety of educational issues and
problems, such as finance, curriculum con-
struction, advanced evaluation and assessment
methods, advanced teaching methodology, etc.
Approved through Fall term 1979.

402B. Seminar in Teaching Secondary Disciplines
Winter. 2(3-0) May not receive credit
for 402B and 327. 302A.
Focused on instructional and curriculum problems in specific disciplines of student's major field of
study. SEPP staff will work in liaison with various University personnel in helping students refine
materials, strategies, and patterns of curriculum organization in major fields. Approved
through Winter term 1980.
423A. Educational Provisions for the Visually Handicapped
Fall, Summer. 3(3-0) 424A. ASC 454.
Causes and effects of visual impairments; definitions, statistics and trends; history and legislation; program and services for children and adults through schools, agencies and institutions; medical and psychological aspects.

423B. Curriculum, Methods and Materials for the Visually Handicapped
Fall, Summer, 4(3-2) 424A, 423C; or concurrently.
Comprehensive curriculum essentials; required teacher competencies; and special principles of instruction. Resources, materials and methods of teaching at the elementary school level. Concurrent laboratory experience in classrooms with visually handicapped pupils.

423C. Braille
Fall, Summer. 4(3-2) 424A, ASC 454.
A laboratory course designed to teach the skills of reading and writing standard English Braille using required tools.

423D. Low Vision and Its Facilitation
Winter, Summer of odd-numbered years. 3(3-0) PSL 223.
A medical lectures and laboratory demonstrations regarding various pathologies leading to reduced vision. Visual and optical aids for utilization of residual vision. Educational implications of pathologies, reduced vision and optical aids.

423E. Daily Living Skills for Visually Handicapped Children
Fall, Summer. 3(0-3) 424A.
Basic techniques for developing competencies in daily living skills including grooming, eating, orientation and mobility. Readiness activities. Use of cane as mode of travel.

423F. Communication Modifications for the Visually Handicapped
Fall, Winter, Spring, Summer. 3(2-2) 423C.
Methods of teaching blind-deaf children including language methods and principles. Use of signs for development of intelligible speech and speech reading, and language, including language methods and principles.

423G. Organization of Services for the Handicapped
Fall, Winter, Spring. 3(3-0) 424A.
Identification and study of organizations important to the operation of special education programs including educational, state and voluntary agencies.
429D. Education of the Severely Retarded
Fall, Winter, Spring. 3(3-0) 424A.
Procedures in teaching severely mentally retarded children and youth.

429. Disabling Conditions: Special Education and Rehabilitation
Fall. 3(3-0) 424A.
Etiology, medical, educational-vocational implications of disability for special education and rehabilitation. Emphasis on medical lectures by physicians.

429G. Laboratory Programs in Driver and Traffic Education
Winter. Spring. 3(3-0) 429F. Ed
Evaluations of the aims, objectives and role of laboratory programs in driver and traffic education. Directed laboratory experiences with new drivers will be provided.

429H. Organization and Administration of Driver and Traffic Education
Fall, Spring. 3(3-0) 429G.
Organizational and administrative aspects of driver and traffic education as they relate to the total school and other specialized programs. Historical and philosophical aspects, evaluation, related professional organizations, and occupational opportunities.

431A. Psycho-Educational Characteristics of the Emotionally Disturbed
Fall, Winter, Spring. 3(3-0) 424A.
Psycho-educational characteristics of the emotionally disturbed are surveyed and evaluated. Additionally, various strategies which purpose to educate the disturbed child are studied and evaluated.

432A. Psycho-Educational Characteristics of the Emotionally Disturbed
Fall, Summer. 3(3-0) 424A.
For majors in the area of the emotionally disturbed only. Emphasis is on the specific learning disabilities of the emotionally disturbed, both in the area of assessment and rehabilitation. Specific methods and materials are surveyed and described in terms of their use.

432C. Classroom Management: Emotionally Disturbed
Fall, Winter, Spring. 3(3-0) 424A, 432A, 432B; and student teaching with emotionally disturbed.
For student teachers in the area of the emotionally disturbed only. The primary emphasis is on psycho-educational characteristics of the emotionally disturbed students in school settings.

433. Alcohol and Drugs: A Social Dilemma
Winter. 3(3-0) 424A.
An overview investigation of the substance abuse phenomena with emphasis on alcohol. Sociological, psychological and medical aspects are discussed with implication for prevention, treatment and rehabilitation.

436. Teaching Internship
Winter, Spring, Summer. 3(3-0) 436A.
Analysis of the student teaching experience. Professional expectations, role of the teacher, and scope of home economics programs.

441B. Advanced Industrial Arts Mechanics
Winter and Fall of odd-numbered years. Spring of even-numbered years. 3(0-6) 441B, approval of department.
Typical applications of power and its control, internal combustion engines, external combustion engines, motors, drives and transmission devices, hydraulics and pneumatic equipment, experimentation with organizational patterns and teaching devices when taken for graduate credit.

441C. Advanced General Electricity
Winter and Fall of odd-numbered years. Spring of even-numbered years. 3(0-6) 441C, approval of department.
Development and construction of simple electric motors, radio, and electronic devices. Experimentation with the development of organizational patterns appropriate to secondary schools when taken for graduate credit.

441D. Advanced Printing and Graphics
Winter and Fall of odd-numbered years. Spring of even-numbered years. 3(0-6) 441D, approval of department.
Typing, plate making, and photography. Attention to the development of adult programs in the area of graphics. Development of resource materials when taken for graduate credit.
470. Science Instruction in Selected Areas for Elementary and Middle School Teachers
Winter, Spring. 3(3-0). May re-enroll for a maximum of 6 credits. 325F.
Extends instructional techniques and knowledge of teaching materials in various science-related curricula for elementary and middle school children. Limited to examination of selected topics during any one term.

471B. Classroom Management in Business and Distributive Education
Fall, Spring. 4(3-2) 200, 327C concurrently or approval of department.
Principles and practices of using materials and media; using community resources; providing directed occupational experiences; how-to-individualize instruction; evaluating student achievement.

472. Organization and Administration of Cooperation Office and Distributive Occupations Programs
Fall, Spring. 3(3-0) 471B or concurrently; or approval of department.
Development of knowledge and understanding of (1) purpose of preparatory in-school curriculum and its relationship to cooperative programs of office and distributive occupations; (2) organization and administration of a cooperative program; (3) coordination techniques; and (4) correlation of on-the-job and in-school learnings through related instruction class.

473. Individualized Study in Industrial Education
Fall, Winter. 3 credits. May re-enroll for a maximum of 8 credits. Approval of department.
Development of professional and technical competencies in industrial education using laboratory, library, school, government, and industrial settings.

475. Practicum in Developmental and Corrective Reading
Fall, Winter, Spring. 3(1-2) 325A.
Application in a field setting of instructional principles introduced in 325A. Also a broad theoretical base for teaching reading.

481C. Canadian-American Studies
For course description, see Interdisciplinary Courses.

477. Use of Paraprofessionals in Counseling
Fall, Spring. 3(3-0) 478.
History and current status of the paraprofessional movement. Review of the selection, training, and evaluation processes; identification of issues and problems in the use of support personnel.

482. Seminars in Education
Fall, Winter, Spring, Summer. 1 to 8 credits. Approval of department.
Seminars in the various fields of emphasis in education.

483. Readings and Independent Study in Education
Fall, Winter, Spring, Summer. 1 to 8 credits. May re-enroll for a maximum of 8 credits. Juniors; approval of department.
Study on an individual basis in the various fields of emphasis in education.

484. Field Experience in Education
Fall, Winter, Spring, Summer. Variable credit. May re-enroll for a maximum of 12 credits. Approval of department.
Supervised undergraduate practicums in education.

485. Elementary Pre-Intern Seminar
Winter, Spring. 3(4-0) Approval of department. Completion of Phase 1 of Internship Teaching.
Selected professional and clinical educational problems are studied in a field setting as an integrated part of the pre-intern twenty-week block of courses.

486. Foreign Field Experience in Elementary Education
Winter, Spring. 4(4-0) Approval of department. 321A.
Supervised undergraduate practicum consisting of study of a foreign country’s culture and related educational practices as an integral part of Phase 1 (student teaching) of Internship Teaching in a foreign country.

489. Core Seminar in Special Education
Fall, Winter, Spring. 2(2-0) 101A, 424A, admission to special education, core students only.
Consideration of affective interactions with children, parents, other professionals, and self. Attention to shifting field experiences, examining belief-behavior consistency, teaching in the affective domain, and the parent-teacher partnership.

490A. Field Experience: Deaf Education
Fall, Winter, Spring. 3(0-6) 436; 435B, C or concurrently.
Observation/participation in daily classes for hearing impaired learners at elementary, secondary or post-secondary levels. Minimum 60 clock hours.

490B. Field Experience: Emotionally Impaired
Fall, Winter, Spring. 3(1-6) May re-enroll for a maximum of 12 credits. 101A.
Supervised practicum in an educational program for emotionally impaired learners accompanied by a discussion period on application of educational strategies.

490C. Field Experience: Mental Retardation
Fall, Winter, Spring. 3(0-6) May re-enroll for a maximum of 8 credits. Approval of department.
Supervised practicum in an educational program for mentally retarded learners.

490D. Aiding Teachers of Visually Handicapped Learners
Fall, Winter, Spring. 1(0-3) May re-enroll for a maximum of 4 credits. Juniors and seniors in education of visually handicapped or blind/deaf children.
Three separate experiences aiding teachers of preschool, primary, intermediate and adolescent-blind, multi-handicapped visually handicapped learners in public and residential school programs.

490E. Aiding Teachers of Blind/Deaf Learners
Fall, Winter, Spring. 1(0-3) May re-enroll for a maximum of 3 credits. Juniors and seniors in education of blind/deaf children.
Three separate experiences aiding children of blind/deaf learners in teaching low-functioning, preacademic and primary education of children.

490F. Teaching Low Vision Skills
Fall, Winter, Spring. 1(0-3) Juniors and seniors in education of visually handicapped or blind/deaf children.
Assisting learners with limited residual vision make maximal use of prescribed low vision aids and interpreting the use of such aids to teachers of nonhandicapped children.

490G. Teaching Daily Living Skills to Visually Handicapped Learners
Fall, Winter, Spring. 1(0-3) Juniors and seniors in education of visually handicapped or blind/deaf children.
Supervised practice with visually handicapped and blind/deaf learners to develop competencies in teaching orientation and mobility, and the other skills of daily living.

490I. Field Experience: Special Education Core
Fall, Winter, Spring. 4(0-16) 101A, 424A, admission to special education, core students only.
Supervised practicum in an educational program for handicapped learners, taken concurrently with Education 424B and 424C.

495. Reading in the Content Areas of the Secondary Level
Fall, Winter, Spring. 2(2-0) Strategies for reading assessment and instruction compatible with content area teaching objectives. Practical applications in classroom settings for learners in grades 4-12 as well as adults. Performance-based.

500. Crucial Issues in Education
Fall, Winter, Spring, Summer. 3(3-0) Approval of department.
Problem analysis of timely issues in education analyzing their legal, historical, sociological, and philosophical dimensions. Attention centered on problems of continuing concern. Particular attention devoted to the role of the teaching profession in issues involving public policy.

501. Seminars in Social and Philosophical Foundations of Education
A. PHILOSOPHY OF EDUCATION
Fall, Winter, Spring, Summer. 3(3-0) Approval of department.
Identification of underlying philosophical problems in education. Use of philosophical methodologies in resolving these problems. Development of a consistent personal philosophy of education.

B. SOCIAL CRITICISM AND EDUCATION
Fall, Summer. 3(3-0) 801A. Approval of department.
Educational implications of critical analysis of contemporary society. Particular attention given to discrepancies between ideology and practice. Building school programs designed to cope with cultural inadequacies.

E. COMPARATIVE EDUCATIONAL PHILOSOPHIES
Fall, Summer. 3(3-0) 801A. Critical analysis and evaluation of the educational philosophies of Plato and Dewey and their implications for practice.

F. MODERN PHILOSOPHIES OF EDUCATION
Spring, Summer. 3(3-0) 801A. Critical analysis and evaluation of leading modern philosophies of education and their implications for practice, such as existentialism, idealism, perennialism, realism, reconstructionism.
802A. Education in the U.S.A.  
Fall, Winter, Spring, Summer. 3(3-0) Approval of department.  
Designed to provide foreign students in graduate programs with theoretical and experiential background in American education.

802B. Education in the U.S.A.  
Winter. 3(2-4) 802A or approval of department.  
Designed to provide foreign students in graduate programs with theoretical and experiential background in American education.

803. Curriculum Innovation in Elementary and Middle School Science  
Summer of odd-numbered years. 3(3-0)  
Experience in teaching, 33SF or approval of department.  
In-depth examination of the objectives, learning theory, instructional strategies, classroom activities, and science content of a single elementary science program selected from among such curriculum revision projects.

504. Historical and Comparative Foundations of Education  
A. History of American Education  
Fall, Winter, Spring, Summer. 3(3-0) Approval of department.  
Development of educational thought and practice in the United States. Importance of cultural influences. A critical examination of progress toward educational goals. Implications of historical background for present problems.

B. Human Education in the United States  
Fall, Spring, Summer. 3(3-0) Approval of department.  
Development of educational thought and practice 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.

C. Educational History: Plato to Locke.  
Winter, Summer. 3(3-0) Approval of department.  
Deals historically with relation of school to developing social trends. An intensive study of the works of leading figures in educational thought. Emphasis upon Plato's Republic. Works by Aristotle, Comenius, Locke and others examined.

D. Development of Educational Thought and Practice in the Modern World.  
Spring, Summer. 3(3-0) Approval of department.  
Deals historically with the development of modern education in the last three centuries. An intensive study of the works of leading figures in educational thought. Emphasis upon Rousseau's Emile. Works by Pestalozzi, Herbart, Froebel, James, and others examined.

E. Education in the Western World.  
Fall, Summer. 3(3-0) Approval of department.  
Comparative study of educational systems and philosophies of Canada, England, France, Russia, and other Western countries. Visiting foreign educators. Field trip to Canada.

F. Education in the Non-Western World.  
Winter. 3(3-0) Approval of department.  
Comparative study of educational systems and philosophies of Asian and African countries to gain insight into the American educational system. Visiting foreign educators.

805. Seminar in Urban Teaching.  
Fall, Spring, Summer. 2(3-0) Approval of department.  
Exploration of literature related to problems, programs, and techniques of effective teaching in urban schools. Importance of student and teacher characteristics and program organization and goals will be assessed as they relate to quality education.

806. Problems of the Professional in Higher Education Administration: Men and Women.  
Spring. 3(3-0) Approval of department.  
Prepares academic, administrative, legal, sociological and psychological factors which affect members of both sexes in the fields of teaching and administration.

Winter. 3(3-0) Approval of department.  
External and internal demands and stresses facing American higher education. How administrators should respond to critical issues and problems.

811. School Learning II.  
Fall, Winter, Spring, Summer. 3(3-0) 410 or 411.  
Survey of research with special attention to applications to teaching and development of school programs.

812. Growth and Behavior.  
Fall, Winter, Spring, Summer. 3(3-0) 410 or approval of instructor.  
Survey of research with special attention to applications to teaching and school programs.

813. Social and Emotional Behavior in the Classroom.  
Fall, Winter, Spring, Summer. 3(3-0)  
Six credits in Psychology or Educational Psychology.  
Survey of experimental and clinical research related to the factors which affect social-emotional development; implications for teaching.

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.

815C. Student Personnel Work in Higher Education.  
Fall, Summer. 3(3-0)  
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.

815D. Introduction to Rehabilitation Counseling.  
Fall. 3(3-0) Open to rehabilitation counseling majors only.  
Overview of field of rehabilitation. Orientation to the Michigan Division of Vocational Rehabilitation. Rehabilitation counseling pre-practicum experience with Michigan Department of Vocational Rehabilitation.

815E. Rehabilitation Internship.  
Fall, Winter. 3 to 21 credits. May re-enroll for a maximum of 21 credits.  
Supervised graduate internship in rehabilitation counseling.

815F. Overview of Rehabilitation Placement.  
Winter. 3(3-0)  
An overview of the impact areas of job placement for the handicapped. Presentations on placement models, state agency approach, pertinent legislation, and employer, counselor, and client perspectives.

815G. Assessing Vocational Potential.  
Winter. 3(3-0)  
Techniques for assessing the vocational potential of disabled individuals including use of vocational tests, medical information, and occupational information for an integrated vocational appraisal.

Spring. 3(3-0)  
Techniques for surveying employers, gaining entry for an interview, presenting oneself, client, and agency, and assisting clients in their search for employment.

816A. Procedures in Guidance.  
Fall, Winter, Summer. 3(3-0)  
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.

816B. Counseling and Guidance in the Classroom.  
Fall, Winter, Spring, Summer. 3(3-0)  
Examination of factors underlying counseling activities of teachers and administrators. Basic principles, methods and techniques related to diagnosing, interviewing, counseling, and referring counselors for special assistance are included.

816C. Practice in Group Counseling Techniques.  
Winter. 3(3-0)  
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 the counseling group.

816D. Practice in Individual Interviewing Techniques.  
Spring, Summer. 3(3-0)  
Role-playing, video tapes, audio tapes and demonstrations are utilized in helping each student develop skills in counseling with children and counseling with parents. Techniques appropriate for various age levels and problems will be practiced.

817A. Introduction to Urban Counseling.  
Fall. 3(3-0)  
Problems—health, socio-cultural, economic, educational, legal, vocational—as manifested by urban residents and their resolution through counseling. Emphasis on systems and personal change mechanisms.
818B. Systemic Counseling
Fall. 3(3-0) Approval of department.
An evaluation of the theory and philosophy of systemic counseling. Issues pertaining to systemic change will be examined.

818C. Urban Counseling Practicum
Fall, Winter, Spring, Summer. 3 credits. May re-enroll for a maximum of 12 credits. 817A or approval of instructor.
A minimum of 12 hours per week of supervised counseling will be performed in an urban agency setting. Emphasis on developing counseling skills applicable to urban residents and urban agencies.

818D. Urban Career Development System Analysis
Winter. 3(3-0) 817A and approval of department.
Critique of existing theories of vocational (career) development and interest inventories for use with urban residents, examination of barriers to urban residents, and development of alternative models.

818K. Community Evaluative Research
Spring. 3(3-0) 817A, 867, and 869, or approval of department.
Application of evaluative research methods to the solution of urban problems; review of current evaluative techniques; identification of problems, design, experiments; review of selected studies.

819A. Counseling Practice
Fall. 3(3-0) Admission to M.A. Counseling Program.
The practice of counseling and guidance in schools, community colleges, and rehabilitation agencies.

819B. Introduction to Counseling Theory
Fall. 3(3-0) Admission to M.A. Counseling Program.
Selected theories of counseling with special attention to the application of theories of learning in the counseling process.

819C. The Guidance Information Service
Winter. 3(3-0) 819A and 819B.
The use of occupational, educational, and social information in counseling interviews and in guidance programs.

819D. The Counseling Process
Winter. 3(3-0) 819A and 819B.
The counseling process with emphasis given to students learning a systematic approach to counseling. Students will interview skills in a counseling laboratory.

819E. Counseling and Consulting Strategies
Spring. 3(3-0) 819C and 819D.
Selected remedial and preventative counseling strategies will be studied. Methods and techniques for assisting with individual and environmental change will be examined. Procedures for consulting with parents, teachers, and agency personnel will be studied.

819F. Counseling Practicum I
Spring. 6(4-8) 819C and 819D.
Supervised counseling experiences in selected schools and agencies followed by analysis and critique of these experiences through group and individual consultation with instructor.

819G. Counseling Practicum II
Fall. 6(4-8) 819F.
Continuation of 819F.

819H. Development of Counseling Services
Fall. 3(3-0) 819F.
A systems approach to the management of pupil personnel services. Students will use the approach in solving simulated problems.

819I. Group Procedures in Counseling
Summer. 3(3-0) 819F.
An examination of theories of group counseling with special attention to goal-directed groups. Tapes of group counseling will be analyzed and practice in leading groups under simulated conditions will be provided.

819K. Research in Counseling
Summer. 3(3-0) 869.
Emphasis on research methods useful to counselors: measuring counseling outcomes, developing local tests, norms, and expectancy tables, evaluating guidance services, studying behavior change in the single case.

820. Principles of Curriculum Improvement
Fall, Winter, Spring, Summer. 3(3-0) Experience in teaching; approval of department.
Principles of curriculum improvement will be developed through the critical analysis of practices found in public schools.

821A. Curriculum Construction
Fall, Winter, Spring, Summer. 3(3-0) Approaches to curriculum construction; organization and function of personnel; initiating and evaluating curriculum change; curriculum research.

821C. Work Experience in the Curriculum
Fall. 3(3-0) Work environment in schools, colleges, agencies and business and industry; educational objectives and outcomes; administrative aspects of work experience programs, research in the field.

821D. Seminar in Middle School Curriculum
Fall, Spring, Summer. 3(3-0) Contrasting patterns of programs for early adolescents: age range and characteristics of middle school pupils: problems and potential of the middle school.

822A. Community College
Fall, Winter, Spring, Summer. 3(3-0) Purposes, functions, and offerings of the community college.

822B. Adult Education: A General Survey
Fall, Spring, Summer. 3(2-0) Approval of department.
Overview of extent, origins, forms, purposes, context, sponsors, methods and guiding theories of continuing education and its significance for individuals, institutions, communities and nations.

822F. Occupational Analysis and Course Construction in Vocational Education
Winter, Summer. 3(3-0) Approval of department.
Techniques of analyzing an occupation to determine the processes, instructional units and curricular arrangements.

822G. Curriculum Construction in Industrial Education
Winter, Summer. 3(3-0) Approval of department.
Selection of general and specialized areas of study in junior and senior high school and adult industrial education courses; industrial problems, their relation to a particular community and its needs in relation to instruction.

822I. Organization and Management of School Shops
Spring, Summer. 3(3-0) Approval of department.
Planning and organization of school shops in terms of adequacy, adaptability, efficiency, economy, and safety.

822N. Principles and Programs of Vocational Education and Practical Arts
Fall, Summer. 3(3-0) Principles of vocational and technical education, comprehensive school program characteristics, program planning. Special emphasis is given to programs in agriculture, distributive, health, home economics, industrial, and office education. For vocational and practical arts teachers and local coordinators and directors of programs.

822P. Coordination in Occupational Training Programs
Fall, Winter. 3(3-0) Approval of department.
Analysis of objectives and scope of distributive, office, trade and industrial cooperative education programs, apprentice ship, and general education work experience. Emphasizes organization and administration, instructional procedures, coordination techniques, non-curricular activities, and evaluation of cooperative occupational education.

822Q. Current Issues and Developments in Occupational Education
Fall, Winter, Spring, Summer. 3(3-0) Examination of issues and problems in occupational education. Special emphasis on the emerging role of various governmental and private agencies in manpower development. Designed for majors in fields other than vocational education.

822S. Developing Occupational Curricula in Two-Year Colleges
Fall, Winter. 3(3-0) 822N, 822A, or approval of department.
Occupational curriculum development and course construction. Developmental projects involving community college faculty, students and employers. For prospective teachers and administrative personnel in two-year colleges.

823. Instructional Simulation
Winter. 3(3-0) Teaching experience.
Design and use of simulations and instructional games in the curriculum for development of social skills, values and affects.

Education — Descriptions of Courses
824. Seminar in Instructional Development  
Winter, Summer. 3(3-0)  
Skills and competencies in applying instructional systems principles to learning and teaching problems.

825. Seminar in Instructional Television  
Spring, Summer. 3(3-0) Approval of department  
Interdisciplinary with the Department of Telecommunications. Television use in instruction, particularly as it concerns the learner, the classroom teacher, the instructional developer and the administrative officer.

826. Social Studies Curriculum K-12  
Winter. 3(3-0) Teaching experience.  
Social studies curriculum planning, development and improvement. Emphasis on holistic K-12 view but each student will be encouraged to concentrate on a selected area or topic.

827. Improving Secondary Social Studies Instruction  
Fall, Spring. Summer. 3(3-0) Teaching experience.  
Recent literature, curricular materials, and research in secondary social studies. Individual projects on new curricular developments in one of the following areas: history, geography, civics, economics, sociology, anthropology, or psychology.

833A. Methods in Teaching Business and Industry  
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 physiological environments, materials, media and personnel to increase knowledge and enhance personal and social maturity.

833B. Methods in Teaching Agriculture Mechanics  
Winter. Summer. 3(3-0) Approval of department.  
Methods of instruction including program planning, scheduling, use of teaching aids, management of buildings, facilities and equipment, the selection, organization, and evaluation of activities in farm mechanics.

831A. Educational Media in Instruction  
Fall, Winter, Spring, Summer. 3(3-0)  
Students may not receive credit in both 431 and 831A.

830E. Diagnosing Problems in Elementary Reading  
Fall, Winter, Spring, Summer. 3(3-0)  
Graduate student in education; undergraduate methods course in reading; approval of department.

830D. Methods in Reading at the Secondary Level  
Fall, Winter, Spring, Summer. 3(3-0)  
An analysis of the reading problems of high school and college students. Material and procedures for identifying the reading attainments and needs of the individual. Basic principles and techniques for improving reading skills.

830C. Methods in Elementary Reading Instruction  
Fall, Winter, Spring, Summer. 3(3-0)  
Graduate student in education; undergraduate methods course in reading; approval of department.

830B. Teaching Adult and Young Farmer Classes in Agriculture  
Fall, Summer. 3(3-0) Approval of department.  
Objectives of adult education in agriculture, organizing and presenting courses, course planning, instructional procedures, follow-up and evaluation.

830A. Special Methods and Materials of Teaching  
Fall, Winter, Spring, Summer. 3(3-0)  
May re-enroll for different subject-matter areas for a maximum of 15 credits. Graduate student in education; experience in teaching; undergraduate course in the area; approval of department.

832. Advanced Methods and Materials in Special Education  
Fall, Summer. 3(3-0)  
Experience in teaching and approval of department.

833. Teaching Elementary School Mathematics  
Fall, Summer. 3(3-0)  
Experience in teaching and approval of department.

834. Teaching Elementary School Geometry  
Winter. Summer of odd-numbered years. 3(3-0)  
Experience in teaching and approval of department.

835. Teaching Elementary School Arithmetic  
Spring. Summer of even-numbered years. 3(3-0)  
Experience in teaching and approval of department.

836. Elementary Education: School Mathematics Instruction  
Winter, Summer. 3(3-0)  
Experience in teaching and enrolled in mathematics education.

For teachers in agriculture, business, home economics, industrial arts and vocational-industrial education. Selection, purchase and use of distinctive materials that characterize shop and laboratory instruction.
841. Driver and Traffic Education

A. INNOVATIONS IN DRIVER AND TRAFFIC EDUCATION
   Fall, Summer. 3(3-0)
   Explanation of the broad spectrum of innovations in driver and traffic education. Particular emphasis will be placed on their adoption and application for improving classroom and laboratory instruction.

B. THE HIGHWAY TRANSPORTATION SYSTEM
   Fall, Summer. 3(3-0)
   Overview of the development, management and operation of the highway transportation system and its implications for the traffic safety educator.

C. PRINCIPLES OF TRAFFIC COMMUNICATIONS
   Winter, Summer. 3(3-0)
   Specialized problems involved in traffic safety communications in a transportation center society. Design and manipulation of the communication process to better understand and influence driver behavior. Planning public information and community support programs.

D. MOTOR VEHICLE ADMINISTRATION
   Spring, Summer. 3(3-0)
   Functions of motor vehicle administration in highway traffic administration. Driver licensing, motor vehicle inspection, vehicle titling and registration, and financial responsibility as legal and administrative methods of driver and vehicle control.

842A. Curriculum and Program Planning
   Summer. 3(3-0)
   Needs and goals in education and manpower training for business, general business and economic education; program structure; professional and youth organizations; related legislation and historical background.

842B. Contemporary Issues in Education for Business
   Summer. 3(3-0)
   Twenty-four graduate credits or approval of department.
   Analysis and discussion of selected issues relating to: 1. education for business—structure, manpower needs, legislation, curriculum, training by government and business, 2. curriculum and instruction. Emphasis upon problem-solving and extensive reading.

842D. Seminar-Research in Business Education
   Summer. 2 to 3 credits.
   Advanced graduate standing for approval of department.
   Focus on current issues and problems, curriculum development projects, and research, emphasis upon individual investigations and writing.

840. Improving Instruction in Office Subjects
   Improving instructional processes through research findings, readings, and experience: Objectives, scope and sequence, diagnosis of learning difficulties, selecting learning activities, evaluating achievement, selecting materials, media and equipment.

A. TYPEWRITING AND OFFICE PROCEDURES
   Summer. 3(3-0) Experience in teaching.

B. SHORTHAND AND TRANSCRIPTION
   Summer. 3(3-0) Experience in teaching.

C. DATA PROCESSING
   Summer. 3(3-0) Experience in teaching.

841. Driver and Traffic Education

A. INNOVATIONS IN DRIVER AND TRAFFIC EDUCATION
   Fall, Summer. 3(3-0)
   Explanation of the broad spectrum of innovations in driver and traffic education. Particular emphasis will be placed on their adoption and application for improving classroom and laboratory instruction.
851. **Foundations of Administration**
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 institutional improvement. Intended primarily for persons actively preparing for administrative positions in schools and other educational agencies.

- **A. Theory and Organization.**
  Fall, Winter, Summer. 3(3-0) Approval of department.
- **B. Practice and Problems.**
  Winter, Spring, Summer. 3(3-0) Regular admission to graduate program and approval of department.

852. **Administration of Educational Institutions**
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.

- **A. Elementary School Administration.**
  Winter, Summer. 3(3-0) Twelve graduate credits in Education including 851A, 851B, or approval of department.
- **B. Secondary School Administration.**
  Fall, Winter, Spring. 3(3-0) Twelve graduate credits in Education including 851A, 851B, or approval of department.
- **C. Instructional Supervision.**
  Fall, Summer. 3(3-0) Twelve graduate credits in Education including 851A, 851B, or approval of department.
- **D. Business Administration of Schools.**
  Winter, Summer. 3(3-0) Twelve graduate credits in Education including 851A, 851B, or approval of department.

852E. **Middle School Administration**
Winter, Summer. 3(3-0) Twelve graduate credits in education including 851A, 851B, or approval of department. Organization and administrative aspects of middle schools. Emphasis on basic characteristics of middle school and how the administrator implements these characteristics. Research on middle schools studied.

853. **Administration of Educational Programs**
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.

- **A. Audio-Visual Programs.**
  Winter, Summer. 3(3-0) Twelve graduate credits in Education including 850 or approval of department.
- **B. Vocational Education.**
  Winter, Summer. 3(3-0) Twelve graduate credits in Education including 850 or approval of department.
- **C. Administration of Regular Programs and Guidance Programs.**
  Spring, Summer. 3(3-0) 815B.
- **D. Administration of Special Education Programs.**
  Winter, Summer. 3(3-0) Approval of department. Organization and administrative aspects of special education programming. Federal, state, intermediate and local district level programs in special education are reviewed.

855. **Research in Educational Administration**
Fall, Winter, Spring, Summer. 3(3-0) 851A, 851B, 857.
The identification of an individual research problem and the application of principles and techniques of educational research in seeking a solution to the problem.

856. **Elementary School Curriculum**
Winter, Summer. 3(3-0) Regular admission to graduate program and approval of department. Curriculum definition as related to purposes of the elementary school. Foundations and rationale for curriculum study, revision, and improvement; procedures and operational aspects of curriculum planning; key components of new educational curricular designs.

857. **Elementary Education Trends and Current Research**
Fall, Winter, Spring, Summer. 3(3-0) Completion of 27 credits of graduate course work on a regular program and approval of department. Advanced graduate students (those nearing completion of the M.A. program or on the doctoral program) are given an opportunity to explore current research activities.

858. **Trends and Issues in Children's Literature**
Winter and Summer of odd-numbered years. 3(3-0) 830A.
Provides graduate students an opportunity to discuss and evaluate current research related to children's literature as well as juvenile books and to conduct an in-depth study in the field of children's literature.

859. **The Teaching of Critical Reading**
Winter and Summer of even-numbered years. 3(3-0) 830A.
Provides graduate students an opportunity to study current research in critical reading, to identify and evaluate appropriate instructional materials, and to conduct an in-depth study in the field of critical reading.

860. **Principles of Educational Measurement**
Summer. 3(3-0) 464 or 465; 813 or PSY 415; 857.
Nature of measurement and types of scales. Units, scores, norms, sampling, item analysis, batteries and profiles. Principles of reliability and validity. Use of test scores in decision making.

861. **Appraisal of Individual Intelligence and Personality**
**A. Individual Measurement—Binet**
Winter, Summer. 3(3-0) 464 or 465 or PSY 415; approval of department. Fundamentals of individual intelligence measurement; measurement of intelligence with the Stanford-Binet. Observation, practice, and interpretation in an educational setting.

**B. Individual Measurement—Wechsler**
Fall, Spring, Summer. 3(3-0) 464 or 465 or PSY 415; approval of department. Measurement of intelligence with the Wechsler scales. Observation, practice, supervision, and interpretation.

**C. Personality Assessment in Education**
Spring, 3(3-0) 464 or 465; 813 or PSY 427.
Study of general personality structure and methods in personality assessment related to education.

862. **Educational Research Methods**
Fall, Winter, Summer. 3(3-0) Approval of department. Rationale for and methods of research in education. Emphasis is given to the identification of researchable problems and the interpretation of research studies in the student's major field.

863. **Evaluation of Programs of Vocational and Practical Arts Education**
Fall, Winter, Spring, Summer. 3(3-0) Approval of department. Evaluation principles and practices in the specialized areas of agricultural, business, and industrial education.

864. **Quantitative Methods in Educational Research**
Fall, Winter, Spring, Summer. 4(3-1) Prerequisite and approval of instructor. Application of descriptive statistical techniques to educational data. Introduction to estimation and tests of hypotheses. Interpretation of statistical reports.

871. **The Secondary School: Role, Function and Structure**
Fall, Winter, Spring, Summer. 3(3-0) Teaching experience in secondary school classrooms. Examines the role, function and structure of various secondary schools. Emphasizes the relationships that do and should exist with other segments of the educational enterprise as well as with external agencies, organizations and institutions.

872. **The American Secondary School Student**
Fall, Winter, Spring, Summer. 3(3-0) Teaching experience in secondary school classrooms. Focuses upon the issues and problems confronting the secondary school student as an adolescent and/or young adult. Attention is given to the relevance of school curricular and staff competencies to meeting these needs of secondary students. Emphasis will be placed upon developing guidelines for needed change.

873. **Student Development and College Personnel Services I**
Fall. 3(3-0) Majors in College Student Personnel; approval of department. 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 his growth, needs and development.

874. **Student Development and College Personnel Programs II**
Winter. 3(3-0) Majors in College Student Personnel; approval of department. Emphasis upon the student as a member of a group; peer and group influence and behavior; student organizations and group activities; service, strategies and staff skills for conducting such programs.

875. **Student Development and College Personnel Programs III**
Spring. 3(3-0) Majors in College Student Personnel; approval of department. 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.
884. **Laboratory and Field Experience in Education**
Fall, Winter, Spring, Summer. Variable credit. Approval of department.
Supervised graduate practicum, observation, internships, and externships in the various areas of emphasis.

887. **Seminar: Continuing Education Leadership in Local Communities**
Spring. 3(3-0). May re-enroll 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.

889E. **Analysis of Special Education Research**
Winter. 3(3-0).
Analysis of research studies in each special education disability area. Study of research design and procedures; discussion of theoretical and applied issues relating to the contexts of the studies.

889F. **Parent-Teacher Relationships in Special Education**
Fall, Spring. 3(3-0).
Development of skills for parent-teacher conferences and consultant-teacher relationships. Strategies for managing home-school relationships in special education. Special problems of parents of handicapped children.

889G. **Community Agency Programs for the Handicapped**
Summer. 3(3-0). Approval of department.
Various official and voluntary agencies and organizations which offer programs and services for the handicapped and the relationship of these programs to special education.

889H. **Special Education Finance**
Fall of odd-numbered years. 3(3-0).
Graduate students. Analysis of major special education funding systems, the Michigan system, intermediate school district special education tax, constituent district reimbursement policies and approaches to special education budgeting.

890A. **Field Experience: Education of Deaf**
Spring of odd-numbered years. 2 to 8 credits. May re-enroll for a maximum of 10 credits. Graduate students, prior teaching or clinical experience.
Supervised graduate field experience in educational programs for the deaf and hearing impaired.

890B. **Field Experience: Emotionally Impaired**
Fall, Winter, Spring, Summer. 3 to 12 credits. May re-enroll for a maximum of 18 credits. May re-enroll for a maximum of 12 credits. Approval of instructor.
Supervised graduate field experience in educational programs for the emotionally impaired.

890C. **Field Experience: Mental Retardation**
Fall, Winter, Spring, Summer. 1 to 12 credits. May re-enroll for a maximum of 12 credits. Approval of instructor.
Supervised graduate field experience in educational programs for the mentally retarded.

890D. **Field Experience: Teaching Visually Handicapped Learners**
Fall, Winter, Spring. 3 to 12 credits. May re-enroll for a maximum of 18 credits. Approval of department.
Supervised graduate field experience in educational programs for the visually handicapped.

890E. **Field Experience: Teaching Blind/Deaf Learners**
Fall, Winter. 3 to 12 credits.
Supervised graduate field experience in educational programs for the blind/ deaf.

891A. **Independent Study: Education of Deaf**
Spring. 2 to 5 credits. May re-enroll for a maximum of 10 credits. Graduate students.
Supervised study in deaf education conducted according to a written agreement stating the problem or topical area of study, the methodology and the product of the study.

891B. **Independent Study: Emotional Impairment**
Winter, Spring. 2 to 6 credits. May re-enroll for a maximum of 12 credits. Graduate students.
Supervised study in emotional impairment conducted according to a written agreement stating the problem or topical area of study, the methodology and the product of the study.

891C. **Independent Study: Mental Retardation**
Fall, Winter, Spring. 1 to 12 credits. May re-enroll for a maximum of 12 credits. Approval of instructor.
Supervised study in mental retardation conducted according to a written agreement stating the problem or topical area of study, the methodology and the product of the study.

891D. **Independent Study: Visually Handicapped or Blind/Deaf**
Fall, Spring. 3 to 12 credits. May re-enroll for a maximum of 12 credits. Supervised study in visually handicapped or blind/deaf conducted according to a written agreement stating the problem or topical area of study, the methodology and the product of the study.

891E. **Independent Study: Learning Disabilities**
Spring. 3 to 12 credits. May re-enroll for a maximum of 12 credits. Supervised study in learning disabilities conducted according to a written agreement stating the problem or topical area of study, the methodology and the product of the study.

891F. **Independent Study: Special Education**
Fall, Winter, Spring. 3 to 6 credits. May re-enroll for a maximum of 12 credits. Approval of instructor.
Supervised study in special education conducted according to a written agreement stating the problem or topical area of study, the methodology and the product of the study.

899. **Research**
Fall, Winter, Spring, Summer. 2 to 12 credits. Approval of department.

901. **Educational Sociology: Seminar**
Fall, Winter, 3 or 4 credits. Approval of department. Interdepartmental with and administered by the Department of Sociology.
904. Historical and Comparative Foundations of Education: Advanced Comparative and International Education
Spring. 3(3-0) 804E; 804F.
Objectives, content, methodology, research problems of comparative and international education analyzed. Social and cultural forces affecting educational planning and institution building studied. Agencies involved in international education identified.

911. Educational Psychology Seminar
Fall, Winter, Spring. 3(3-0) May re-enroll for a maximum of 15 credits. Doctoral candidates or approval of instructor. Educational psychology doctoral candidates must enroll in the fall.
History of educational psychology, learning and cognition, personality and self-concept development, social psychology of classroom behavior, social learning theory, school psychology, research on teaching.

915B. Counseling Proseminar II
Winter. 3(3-0)

917C. Counseling Supervision in Urban Settings
Fall, Winter, Spring. 3(1-12) May re-enroll for a maximum of 9 credits. 917C (12 credits).
Development of supervisory skills in relation to the systemic counseling model with urban settings as a focus. Practice to supervising master's level students in Urban Counseling field experiences.

921. Curriculum Research Seminar
Spring. 3(3-0) 897; 891A.
Identification of researchable variables in the curriculum of an educational institution or program. Design of descriptive, evaluative and experimental studies within ongoing complex social systems.

922. Research on Teaching
Fall. 3(3-0) 867.
Implications from findings of the major investigations into teaching processes. Relations to the curriculum of in-service and pre-service teacher education.

931A. Seminar in Instructional Technology: Research and Development
Fall. 3(3-0) Approval of department.
History and development of instructional technology emphasizing leaders, events, research and legislation affecting use of instructional technology in education.

931B. Seminar in Instructional Technology: Research and Development
Winter. 3(3-0) Approval of department.
Analysis and appraisal of selected research studies in instructional technology with attention to purposes, rationales, assumptions, designs, methodologies and findings.

931C. Seminar in Instructional Technology: Research and Development
Spring. 3(3-0) Approval of department.
Analysis and appraisal of student's dissertation proposals and reports on surveys of related literature.

933. Elementary Education: School Mathematics Learning
Spring. 3(3-0) Experience in teaching and enrolled in mathematics education.
Extensive review of the research of Bruner, Piaget, Gagne, etc., on how students learn in general and how they learn mathematics in particular.

934. Elementary Education: School Mathematics Curriculum
Fall. 3(3-0) Experience in teaching and enrolled in mathematics education.
Emphasizes the place of mathematics in the curriculum, the strands of mathematics that should be included—the ordering of topics of each strand and emphasis of the respective strands.

947. Seminar in Elementary Science Education II
Spring of odd-numbered years. 3(3-0)
847: enrolled in graduate program.
Analysis of research in science education at the elementary level in such areas as curriculum, methodology, and evaluation. Application of research to individual investigations.

949. Advanced Seminar in Language Arts
Spring. 3(3-0) 849.
Development of language arts programs in elementary education, preparation of language arts teachers, analysis of research in language arts and those substantive disciplines related to language arts.

950. Theory and Practice of Administration
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.

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

952. Educational Finance
Fall, Summer. 3(3-0) Approval of department.

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

954. Planning Facility Learning Environments
Spring, Summer. 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.

955. Educational Personnel Administration
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.

956. 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 examined and tested by laboratory and field experiences.

957. The Department in Higher Education
Winter. 3(3-0) Approval of department.
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.

958. Management Systems in Higher Education Administration
Fall, Spring. 3(3-0) Approval of department.
The application of National Center for Higher Education Management Systems tools to decision making in higher education administration. Resource Allocation Prediction Model 1.6, student flow and faculty activity analysis are major tools investigated.

960. Counseling Theories
Winter, Summer. 3(3-0) Approval of instructor.
Survey of counseling theories and research with emphasis on current issues which have implications for counseling practice or for counselor education.

965A. Psychometric Theory
Spring of even-numbered years. 3(3-0) 865, 965B.
Advanced theoretical aspects and derivation of formulas involved in reliability, validity, item analysis, weighting and differential prediction, sampling and norm construction, and the relation of item characteristics to test statistics.

965B. Problems of Educational Measurement
Winter of even-numbered years. 3(3-0) 865, approval of department.
Advanced consideration of the logical and philosophical bases of educational measurement. Theory of test planning and development and evaluation. Problems of test administration and scoring. Issues in test use.

965C. Evaluation of Higher Education
Spring. 3(3-0) 825E.
Ways in which evaluation takes place in higher education: course examination, grading, comprehensive examinations, teacher evaluation, institutional evaluation, state surveys, and regional and national studies of higher education problems.

967. Advanced Research Methods in Education
Fall, Spring. 4(3-1) 867 and 868, or 969B.
Principles and techniques in survey research with limited consideration of content analysis and observational studies. Sampling, instrumentation, data collection, and data analysis.
965B. Research Analysis in Personnel Work
Winter, Summer. 3(3-0) Approval of department.
Critical review of research and literature in counseling and personnel services.

969. Quantitative Methods in Educational Research
B. ADVANCED QUANTITATIVE METHODS IN EDUCATIONAL RESEARCH.
Fall, Winter, Summer. 4(3-1) 969 or permission of instructor.
Principles and techniques in the application of inferential statistics to educational data with emphasis on the analysis of variance and multiple comparison procedures. Overview of regression techniques.

C. EXPERIMENTAL DESIGN IN EDUCATION
Winter, Spring, Summer. 4(3-0) 968B.
Theory and practice in the design, analysis, and interpretation of experimental and quasi-experimental research.

970. Reading and Research in Student Teaching
Spring. 3(0-0) Approval of department.
Literature, research and practice in teacher education field experiences. Concentration on issues, problems and skills needed in supervision of student teachers.

973. College Student Personnel Administration I
Fall. 3(0-0) Approval of department.
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 aid, etc.

974. College Student Personnel Administration II
Winter. 3(3-0) Approval of department.
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.

975. College Student Personnel Administration III
Spring. 3(0-0) Approval of department.
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.

982. Seminars in Education
Fall, Winter, Spring, Summer. Variable credit. Approval of department.
Seminars in the various fields of emphasis.

983. Readings and Independent Study in Education
Fall, Winter, Spring, Summer. Variable credit. Approval of department.
Study on an individual or group basis in the various fields of emphasis.

984. Laboratory and Field Experience in Education
Fall, Winter, Spring, Summer. Variable credit. Approval of department.
Supervised advanced graduate practicums, observation, internships, and externships in the various areas of emphasis.

985. Counseling Pre-Practicum
Spring. 3(2-1) Doctoral status in college counseling or related area and approval of department.
Seminar emphasizing establishing good interpersonal relationships, self-understanding, an understanding of psycho-dynamics, and test interpretation as preparation for assuming counseling responsibilities. Approach is didactic and experiential with limited contacts with clients.

986A. Counseling Practicum I
Fall. 3(0-3) 985 or approval of department.
Supervised experience working with college students in a counseling relationship. Group discussions, group supervision and observation of counseling interviews, and individual supervision.

986B. Counseling Practicum II
Winter, 3(0-3) 986A.
Supervised experience working with college students in a counseling relationship. Group discussions, group supervision and observation of counseling interviews, and individual supervision.

987A. Seminar: Continuing Education and Social Policy
Fall. 3(0-0) May re-enroll for a maximum of 6 credits. Major or approval of department.
Continuing education, as social force impacting and impacted by government and corporate policy. Examination of domestic and foreign examples of interaction between social policy and continuing education.

987B. Seminar: Continuing Education in Higher Education Institutions
Winter. 3(0-0) May re-enroll for a maximum of 6 credits. Major or approval of department.
Patterns, problems, and potential for continuing education in two and four year colleges. Problems of governance, reward systems, leadership roles, etc.

988. Behavioral Counseling Laboratory
Fall, Winter, Spring. 1 to 6 credits. May re-enroll for a maximum of 21 credits.
Supervised experience in behavioral counseling (individual and group), community consultation, applied behavioral research, journal manuscript preparation, preparing instructional materials, and instructional management.

990A. Field Experience: Special Education Administration Simulation
Spring. 3(0-9) Approval of department.
Supervised graduate practicum in administration of the Special Education program of a simulated school district.

990B. Field Experience: Special Education Administration
Fall, Winter, Spring, Summer. 2 to 12 credits. May re-enroll for a maximum of 18 credits. Approval of department.
Supervised graduate practicum in special education administration.

990C. Field Experience: Special Education
Spring. 3 to 12 credits. May re-enroll for a maximum of 18 credits. Approval of department.
Supervised graduate practicum in special education teacher training.

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

ELECTRICAL ENGINEERING AND SYSTEMS SCIENCE

College of Engineering

Electrical Engineering

275. Consumer Electronics
Fall, Winter, Spring. 3(0-0)
Electronic circuit components and devices; their operation in transmitters, receivers, audio amplifiers, etc. Electronic measurements, magnetic recording, speaker systems, and other topics will be considered.

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

301. Electric Circuits II
Winter, Spring. 4(4-0) 300, MTH 214.

302. Basic Electronic Circuits
Spring, Summer. 4(4-0) 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
(384) Fall, Winter, Spring. 1(0-3) 300; 301 concurrently.
Electronic test equipment and measurement fundamentals. Experimental verification of topics covered in 300 and 301. Computer-aided circuit analysis and design.

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

305. Electromagnetic Fields and Waves I
Fall, Winter. 3(3-0) MTH 215, PHY 298.