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

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

880. Organization and Control in the Political Economy: Institutions and Theory
Winter of even-numbered years. 4(4-0)
Interdepartmental with the Department of Management.
Organization and technique in choice and implementation of economic (especially planning, programming) functions of political authority.

881. Organization and Control in the Political Economy: Selected Problems
Winter of odd-numbered years. 4(4-0)
Approval of instructor. Interdepartmental with the Department of Management.
Analysis of role and tasks, appropriate techniques and organizational structures of political agencies in planning and management of complex programs.

891. Topics in Applied Econometrics with particular attention to problems of testing hypotheses in the context of economic models.

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

900. Selected Problems in Advanced Microeconomic Theory
Fall, Winter, Spring, Summer. 3(3-0)
May reserue for a maximum of 12 credits. EC 812A, EC 812B, EC 812C. 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 reserue for a maximum of 12 credits. EC 812A, EC 812B, EC 812C. Analysis of the behavior and interaction of multitrade systems.

927. 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 values. Critical appraisal of research studies.

990B. Industrial Organization and Public Policy Workshop
Fall, Winter, Spring. 3 to 16 credits. Approval of department.
Critical evaluation of research reports by staff and other students. Students writing doctoral dissertations in the appropriate areas are encouraged to participate in workshop and may do so while registered for EC 999.

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

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

EDUCATION

College of Education

101A. Exploring Elementary Teaching
Fall, Winter, Spring. 3(1-4) Preliminary 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.

1235. Introduction to Careers in Vocational and Practical Arts Education: Industrial Arts
(124D.) Winter and Fall of even-numbered years, Spring of odd-numbered years. 2(3-0) ED 124B or 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.

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, patternmaking, carpentry, introductory machinework, finishing. Designed to exemplify, in both organization and equipment, desirable practices in today's secondary schools.

230. Introduction to Careers in Vocational and Practical Arts Education

Principles and practices for teachers when helping middle school and high school students develop awareness of career opportunities and develop career preparation plans.

A. Agriculture and Natural Resources
(124A., 124B.) Fall. 2(1-2) Open only to teaching majors or minors in agriculture and natural resources. Interdepartmental with Agriculture and Natural Resources.
To assist agriculture and natural resource teachers in developing concepts pertaining to the nature and functions of persons in agriculture and natural resources occupations and development of competencies which will assist in making their students aware of these functions.

B. Business and Distributive Education
(125E.) Winter. 2(1-2) Open only to teaching majors or minors in business and distributive education.
To assist business teachers in developing concepts pertaining to the nature and functions of persons in the business world and in developing competencies which will assist in making their students aware of these functions.

241A. Advanced Woodwork
Winter and Fall of even-numbered years, Spring of odd-numbered years. 3(0-6) ED 141B or approval of department.
Self 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, bookbinding, black 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.
321A. Curriculum Methods and Materials—Elementary Education
Fall, Winter, Spring, Summer. 3(1-7) Juniors, ED 101A, ED 200. Must be taken concurrently with or prior to courses in ED 325 series.
Base, scope, and sequence of curriculum in reading, language arts, and social studies; adaptation of principles to methods and materials of teaching in the elementary and middle school.

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

325B. Teaching of Language Arts in Elementary Grades
Fall, Winter, Spring, Summer. 3(3-0) ED 200, Juniors.
Course to acquaint prospective elementary teachers with content and materials in language arts for grades below the seventh. Students also given opportunity to acquire skills in manuscript and blackboard writing.

325C. Critical Reading and Children's Literature
Fall, Winter, Spring, Summer. 3(3-0) ED 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) ED 200, Juniors; three terms of Social Science.
To help students develop understanding of philosophy and aims of social studies movement in elementary schools, and ability to further such aims through familiarity with a variety of materials, 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) ED 200, Juniors; MTH 201.
Presents methods and materials for teaching mathematics in the elementary school. Methods and techniques of presenting mathematics content meaningfully to elementary pupils will be illustrated.

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

325G. School Music Instrumental Methods
Fall. 3(2-2) Instrumental music major; MUS 250.
Instrumental instruction program at elementary level.

325H. School Music Vocal Methods
Fall. 4(3-2) Approval of the Department of Music; MUS 250.
Basic instructional program in primary and intermediate grades.

327. Methods of Teaching—Secondary Common Elements
Fall, Winter, Spring, Summer. 2(2-0) ED 200; a subject area methods course ED 327A to ED 327F 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 education principles and policies.

327A-V. Methods of Teaching—Secondary Subject Areas
Specifying of classroom instruction in the various subject-matter fields. Selection of instructional techniques based on recognized course objectives, needs and characteristics of learners, and sound educational principles and policies.

A. Agriculture
Fall, Spring. 3 credits. ED 200; ED 327 or concurrently.
B. Art
Fall, Winter, Spring. 3 credits. ED 200; STA 303, STA 320; ED 327 or concurrently.
C. Business and Distributive Education
Fall, Winter, Spring. 3 credits. ED 200; ED 327 or concurrently.
D. English
Fall, Winter, Spring. 3 credits. ED 200; ED 327 or concurrently.
E. Romance Languages
Fall. 3 credits. ED 200; ED 327 or concurrently.
F. Health
Spring. 3 credits. ED 200; ED 327 or concurrently.
G. Physical Education
Fall, Winter, Spring. 3 credits. ED 200; ED 327 or concurrently.
H. History
Fall, Winter, Spring. 3 credits. ED 200; ED 327 or concurrently.
K. Home Economics
Fall. 3 credits. ED 200; ED 327 or concurrently.
L. Natural Resources, Environmental Education and Earth Science
Spring. 3(0-6) ED 200 for education majors; other, approval of department.
M. Industrial Arts
Fall, Spring. 3 credits. ED 200; ED 327 or concurrently.
N. Mathematics
Spring. 3 credits. ED 200; ED 327 or concurrently.
P. Music—Instrumental
Winter. 3 credits. ED 200; ED 327 or concurrently; MUS 250.
R. Music—Voice
Winter. 3 credits. ED 200; ED 327 or concurrently; MUS 250.
S. Science
Fall, Winter, Spring, Summer. 3(2-2) ED 200; ED 327 or concurrently.
T. Social Science
Fall, Winter, Spring. 3 credits. ED 200; ED 327 or concurrently.
U. Communication
Spring. 3 credits. ED 200; ED 327 or concurrently.
V. German and Russian
Fall. 3 credits. ED 200; ED 327 or concurrently.

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

341A. Advanced Metalwork
Winter and Fall of even-numbered years, Spring of odd-numbered years. 3(0-6) ED 214B or approval of department.
Work in bench metal, sheet metal, forging, welding, plating, casting, machining of metals. 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. Designed to exemplify desirable practice in course organization and facilities for the modern secondary 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-community relations, social control of education, and structure of school society.

499. Supervising High School Publications
Spring, Summer. 3(3-0) Juniors, non-majors. Interdepartmental with and administered by the School of Journalism.
Staff organization, finance, law, function, and editorial policies of school newspaper and yearbooks.

410. Instructional Design and Technology
Fall, Spring. 2 to 4 credits. May reenroll for maximum of 6 credits. ED 200.
Students design plans for implementing instruction via systems approach and application of learning principles.

411. School Learning I
Fall, Winter, Spring. Summer. 3(3-0) ED 200.
Verbal learning, concept formation, problem solving and transfer with implications for teaching in schools.

412. Human Growth and Development
Fall, Winter, Spring. 4(3-4) ED 200.
Patterns in human growth and mental and emotional development of children 3 through 12 and adolescents 12 through 18; observation and participation in schools is an integral part of the course.
413. Mental Health of School Children
Fall, Winter, Spring, Summer. 3(3-0)
ED 200.
Social and emotional adjustments of children. Emphasis on balancing factors favoring prevention and resolution of behavior difficulties and evaluation of school programs on basis of their contribution to mental health.

414. Interpersonal Process Recall
Fall, Winter, Spring, Summer. 3(3-2)
Approval of instructor.
Interpersonal communication focusing on one's own interpersonal style through self-study of video-recorded interviews.

415. Student Leadership Training
Fall, Winter, Spring. 20-3; May reenroll for a maximum of 4 credits if different topic is taken. Approval of instructor.
Prepares students for leadership roles and responsibilities by encouraging the development of skills and techniques consistent with the principles of our democratic society.

423A. Educational Provisions for the Visually Handicapped
Fall, Summer. 3(3-0) ED 424A, ASC 3(2-2) ED 429A.
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.

423B. Curriculum, Methods and Materials for the Visually Handicapped
Fall, Summer. 4(3-2) ED 424A, ED 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) ED 424A, ASC 3(2-2) ED 429A.
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) FSL 353.
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(3-0) ED 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 Visually Handicapped Children
Spring. 3(2-2) ED 453C.
A laboratory course including Nemeth Code of Mathematics, spelling, music and language notations; preparation of classroom materials; establishing text reference materials. Emphasis upon instruction at the secondary level.

423C. Education of the Blind-Deaf
Fall, Winter, Spring. 3(2-2) May reenroll for a maximum of 9 credits. ASC 222, ASC 277, ASC 454, or concurrently.
Methods of teaching the blind-deaf children including guiding principles; curriculum structure; readiness activities; sensory development; discipline; evaluation, methods of communication; speech and sign reading, and language, including language methods and principles.

423H. Teaching Optaon Reading to Blind School-Age Learners
Fall, Winter, Spring. 1(0-2) Junior Special Education majors.
A laboratory course emphasizing curriculum, teaching methods and materials designed to enable blind school-age learners to read print using the Optacon.

424A. Education of Exceptional Children
Fall, Winter, Spring. 3(3-0)
Emphasis on the nature of handicapping conditions and educational needs and approaches. Includes mental retardation; emotional disturbance; visual, auditory and physical handicaps.

424B. Psycho-Educational Evaluation of the Handicapped
Fall, Winter, Spring. 3(3-0) ED 424A.
Screening and placement procedures. Terminology and interpretation of tests used for assessment of intelligence, aptitude, achievement, personality and interests of the handicapped.

424C. Organization of Services for the Handicapped
Fall, Winter, Spring. 3(3-0) ED 424A.
Identification and study of organizations important to the operation of special education programs including educational, state and voluntary agencies.

425A. Educational Provisions for Deaf Children and Youth
Winter. 3(3-0) ED 424A, ED 436, ASC 454.
Adaptation of educational methods, materials and curriculum to the needs of individuals with severe and profound hearing impairments.

425B. Language Development for the Deaf
Fall. 3(3-0) ED 424A, ED 436, ASC 222, ASC 454.
Languages of development; considerations of systems in both oral and total communication philosophies; practice in manual communication.

425C. Speech Development for the Deaf
Fall. 3(3-0) ED 425B or concurrently.
Techniques for aiding development of intelligible speech in individuals with severe and profound hearing loss.

425D. Manual Communication I
Fall, Winter. Summer of odd-numbered years. 3(2-2) Approval of department.
Development of basic skills in finger spelling and the language of signs, with emphasis on signed English; practice in simultaneous use with spoken English.

425E. Manual Communication II
Fall, Winter. 2 to 4 credits. May reenroll for a maximum of 5 credits. ED 425D.
Continued development of skills in total communication for use in educational service delivery systems. Practice in simultaneous use of speech, finger-spelling and the language of signs at an intermediate level.

427A. Educational Provisions for the Physically Handicapped
Fall. 3(3-0) ED 424A, ED 436.
Facilities, programs, trends, methods, materials and terminology in education of the physically handicapped. Field trips to special classes and hospital school programs.

427B. Educational Provisions for Learning Disabilities
Fall, Winter, Spring. 3(3-0) ED 424A.
Characteristics and terminology of basic learning theories and learning disabilities. Educational practices and programs and major contributors. Field practice with learning disabled children.

428A. Psycho-Educational Characteristics of the Mentally Retarded
Fall, Summer. 3(3-0) ED 424A or approval of department.
Cognitive, affective and social characteristics of the mentally retarded. Implications for school learning and life adjustment. Differentiation of mental retardation from related conditions.

428B. Curriculum for the Mentally Retarded
Fall, Summer. 3(3-0) ED 424A or approval of department.
The development of curriculum for mentally retarded children and youth emphasizing current practice in pre-school through secondary school programs for educable and trainable mentally retarded.

428C. Educational Procedures for the Mentally Retarded
Fall, Summer. 3(3-0) ED 424A or approval of department.
Methods of instruction for mentally retarded children and youth, including the development of objectives, assessment of individual abilities, the development of learning skills, and the teaching of non-academic and academic skills.

428D. Education of the Severely Retarded
Fall, Winter. Spring. 3(3-0) ED 424A.
Procedures in teaching severely mentally retarded children and youth.

429C. Laboratory Programs in Driver and Traffic Education
Fall, Spring, Summer. 5(3-4) ED 329F, valid driver's license.
Examination 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, Summer of even-numbered years. 3(3-0) ED 329F.
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.
429. Personality Factors in Driver and Traffic Education
Winter. Summer of odd-numbered years. 3(3-0) ED 329F, FSY 225.
Study of behavior with emphasis on attitudes, motivation, and adjustment and their relationship to unsafe driving. Investigation of principles, and methods appropriate in identifying, understanding, and modifying unsatisfactory behavior.

429K. Fundamentals of Traffic Law
Spring. Summer of odd-numbered years. 3(3-0) Interdepartmental with the School of Criminal Justice.
Nature, function and application of traffic law as it applies to the safe and efficient movement of people and goods in a broadly conceived traffic accident prevention program.

429L. Methods and Materials in Driver and Traffic Education
Winter. 3(3-0) ED 329F.
Classroom instruction in driver education. Selection and presentation of appropriate classroom materials. Evaluation of classroom teaching techniques.

429M. Curriculum Development in Driver and Traffic Education
Spring. 3(3-0) ED 429G, ED 429L.
Phenomenological basis of curriculum construction. Trends in driver education curriculum development. Development of model curricula for two, three and four phase driver education programs using accepted principles of curriculum construction.

430. Teacher Preparation in Motorcycle Safety
Spring. 4(3-2) ED 329F, teaching certificate or College of Education major, Motorcycle Endorsement.
Development of teacher competencies in developing, organizing, and teaching motorcycle safety education courses for novice drivers. Examination of existing curricula, teaching aids, and resources. Practice teaching of novice drivers.

431A. Educational Media in Instruction
(431) Fall, Winter, Spring. 3(3-0)
Juniors.
Educational media for preservice and inservice teachers, and media specialists. Selection and utilization of flat pictures, slides, filmmativs, motion picture films, sound, models, radio, and television. Equipment operation acquired through self instructional laboratory. Field trips required.

431B. Basic Educational Graphics
Fall, Winter, Spring. 3(3-0) ED 431A or approval of department. A course for teachers and prospective teachers in the local production of visual instructional materials.

432A. Psycho-Educational Characteristics of the Emotionally Disturbed
Fall, Winter. Spring. 3(3-0) ED 432A.
Psycho-educational characteristics of the emotionally disturbed are surveyed and evaluated. Additionally, various strategies which purport to educate the disturbed child are studied and evaluated.

432B. Remedial Practices with the Emotionally Disturbed
Fall, Winter. 3(3-0) ED 432A.
Emphasis is on the specific learning disabilities of the emotionally disturbed, both in the area of assessment and remediation. Specific methods and materials are surveyed and described in terms of their use.

432C. Classroom Management: Emotionally Disturbed
Fall, Winter, Spring. 3(3-0) ED 424A, ED 432A, ED 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 curriculum, and management of the emotionally disturbed in school settings.

433. Alcohol: A Social Dilemma
Winter. 3(3-0) Juniors or approval of college. Departmental with and administered by the School of Criminal Justice.
Substance abuse with emphasis on beverage alcohol. Sociological, psychological and medical aspects. Prevention, treatment, rehabilitation.

436A. Student Teaching
Fall, Winter, Spring. 15(5-35) May reenroll for a maximum of 30 credits to qualify for different area or certification. 2.00 cumulative grade-point average; ED 237 for Secondary Education majors; ASC 477 for Audiology and Speech Sciences majors; approval of college. Applications must be made to the Student Teaching Office as follows: Fall - during previous October; Winter - during the previous February; Spring - during the previous May.
Participation in activities of school and community. Teaching and related activities, observation, and seminar on the problems of teaching. Usually requires students to live in typical Michigan cities for an entire term.

436B. Student Teaching
Fall, Winter, Spring. 5(3-6) 2.00 cumulative grade-point average; ED 337 for Secondary Education majors; ASC 477 for Audiology and Speech Sciences majors; approval of college. Application must be made to the Student Teaching Office as follows: Fall - during the previous October; Winter - during the previous February; Spring - during the previous May.
Participation in activities of school and community. Teaching and related activities, observation, and seminar on the problems of teaching. Usually requires students to live in typical Michigan cities for an entire term. A competency based course.

436C. Student Teaching
Fall, Winter, Spring. 10(3-20) ED 436B. Application must be made to the Student Teaching Office as follows: Fall - during the previous October; Winter - during the previous February; Spring - during the previous May.
Participation in activities of school and community. Teaching and related activities, observation, and seminar on the problems of teaching. Usually requires students to live in typical Michigan cities for an entire term. A competency based course.

436S. Student Teaching Special Education 2nd Term
Fall, Winter. Spring. 15(5-35) ED 436A.
School and community participation: Planning, conducting and evaluating instruction in special education services to students; observation and supervision of teachers; observation and seminars; working with other special education professionals. An off-campus course in selected Michigan locations.

441A. General Industrial Arts
Fall and Winter of odd-numbered years, Spring of even-numbered years. 3(0-6) ED 436 or approval of department. Research in the facilities, materials, and organization of general industrial arts in the modern secondary school.

441B. Advanced Industrial Arts Mechanics
Winter and Fall of even-numbered years, Spring of odd-numbered years. 3(0-6) ED 341B, approval of department.
Typical applications of power and its control, internal combustion engines, external combustion engines, motors, drive, and transmission devices, hydraulic 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) ED 341C or approval of department.
Development and construction of simple electric motors, radios, 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) ED 241D or approval of department.
Printing, plate making, and photography. Attention to development of adult programs in the area of graphics. Development of resource materials when taken for graduate credit.

441E. Advanced Industrial Arts Crafts
Winter and Fall of odd-numbered years, Spring of even-numbered years. 3(0-6) ED 241C or approval of department.
Designed to provide the industrial arts teacher with sufficient breadth and skill to enable him to establish such a program in a secondary school.

442. Principles and Practices in Home Economics
Spring. 3(3-0) ED 436.
Analysis of the student teaching experience. Professional expectations, role of the teacher, and scope of home economics programs.

446. Teaching Internship
Fall, Winter, Spring. 5 to 15 credits. May reenroll for a maximum of 22 credits. ED 321E.
Internship teaching experience under the guidance and supervision of intern consultants and other MSU faculty. Involves a variety of activities, including full-time teaching experience in a selected school.

450. School and Society
Fall, Winter, Spring. 5(3-2) ED 200.
Study of the structure, function and purposes of educational institutions. Course provides options for students in meeting professional needs recognized in directed teaching and desired before entering full professional practice.

464. Standardized Tests and Testing Programs
Fall, Winter, Spring. 3(3-0) Approval of department.
An overview of standardized tests and sources of information about them. Selection and uses of standardized tests. Interpretation of standardized test scores. Local and widescale testing programs.
465. Testing and Grading
Fall, Winter, Spring. 3(3-0)
ED 300.
Construction, use, and evaluation of teacher-made classroom tests, objective and essay, in elementary schools, secondary schools, and colleges. Statistical analysis of test scores and item responses. Grading problems.

470. Science Instruction in Selected Areas for Elementary and Middle School Teachers
Winter, Spring. 3(3-0) May reenroll for a maximum of 8 credits. ED 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(3-3) ED 421C 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.

473. Individualized Study in Industrial Education
Fall, Winter. 3 credits. May reenroll for a maximum of 9 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(1-4) ED 325A.
Application of instructional principles introduced in ED 325A in an off-campus setting.

477. Use of Paraprofessionals in Counseling
Fall, Spring. 3(3-0)
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.

481. Museum as an Educational Tool
Spring. 4(4-0) Juniors
The museum as an educational tool. Classroom preparation for the museum experience. Museum strategies including dioramas, collections, models, exhibits and reconstructions. Application of museum strategies to other educational settings.

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. 1 to 8 credits. May reenroll 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. Variable credit. May reenroll for a maximum of 12 credits. Approval of department.
Supervised undergraduate practicum in education.

485. Elementary Pre-Intern Seminar
Winter, Spring. 4(4-0) Approval of department.
Completion of Phase I of Internship Teaching. Selected professional and clinical educational problems are studied in an 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.
ED 301A.
Supervised undergraduate practicum combining a study of a foreign country's culture and related educational practices as an integral part of Phase I of Internship Teaching in a foreign country.

490A. Field Experience: Deaf Education
Fall, Winter, Spring. 3(3-0) ED 468, ED 458, ED 495C or concurrently.
Observation/participation in day classes for hearing impaired learners at elementary, secondary, or post-secondary levels. Minimum 80 clock hours.

490B. Field Experience: Emotionally Impaired
Fall, Winter, Spring. 3(3-0) May reenroll for a maximum of 12 credits. ED 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(3-0)
Supervised practicum in an educational program for mentally retarded learners.

490D. Aiding Teachers of Visually Handicapped Learners
Fall, Winter, Spring. 3(3-0) May reenroll for a maximum of 4 credits. Juniors and majors in education of visually handicapped or blind/deaf children.
Three separate experiences aiding teachers of blind/deaf learners in teaching low-functioning, preacademic, and primary level children.

490E. Aiding Teachers of Blind/Deaf Learners
Fall, Winter, Spring. 3(3-0) May reenroll for a maximum of 4 credits. Juniors and majors in education of blind/deaf children.
Three separate experiences aiding teachers of blind/deaf learners in teaching low-functioning, preacademic, and primary level children.

490F. Teaching Low Vision Skills
Fall, Winter, Spring. 1(0-0-3) Juniors and majors 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 non-handicapped children.

490G. Teaching Daily Living Skills to Visually Handicapped Learners
Fall, Winter, Spring. 1(0-0-3) Juniors and majors 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.

490J. Field Experience: Special Education Core
Fall, Winter, Spring. 3(3-0) Approval of instructor.
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.

800. Crucial Issues in Education
Fall, Winter, Spring. 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.

801. Seminars in Social and Philosophical Foundations of Education
A. Philosophy of Education
Fall, Winter, Spring. 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.

D. Social Criticism and Education
Fall, Summer. 3(3-0) ED 801A, approval of department.
Educational implications of critical analyses 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
Winter, Summer. 3(3-0) ED 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) ED 801A. Critical analysis and evaluation of leading modern philosophies of education and their implications for practice, such as: existentialism, idealism, perennialism, realism, reconstructionism.
Education - Descriptions of Courses

802A. Education in the U.S.A.
Fall. 3(0-4) Passed English Language Center examination or approval of department. Designed to provide first term foreign students in graduate programs with theoretical and experiential background in American education.

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

802C. Introduction to Rehabilitation and Special Education in the United States
Fall, Spring, Summer. 3(3-0) Approval of instructor. Overview of rehabilitation and special education programs in the United States. Emphasis will be given to historical development, current status, and future directions of services for handicapped persons.

804. 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 and implications of progress toward educational goals. Implications of historical background for present problems.

B. Higher Education in the United States
Fall, Spring, Summer. 3(3-0) Approval of department. Development of higher education in the United States and its foreign antecedents. Survey of higher education today with attention to purposes, curriculum, organization, financing, and the major issues in these areas. Attention is also given to a world view of higher education with special focus upon the influences of United States higher education in foreign countries.

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.

G. Education in Economic Development
Fall. 3(3-0) ED 804F. Contribution of and constraints on education in promoting economic development. Special attention given to population growth, migration, and employment considerations. Emphasis on less developed countries.

805. Seminar in Urban Teaching
Fall, Spring, Summer. 3(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. Presents academic, administrative, legal, sociological and psychological factors which affect members of both sexes in the fields of teaching and administration.

806A. Political Issues in American Higher Education
Fall. 3(3-0) Approval of department. 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.

807. Contemporary Issues in American Higher Education 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.

808. Methods and Materials in Children’s Literature
Fall, Winter, Spring, Summer. 3(3-0) Undergraduate course in children’s literature, graduate students. Critical evaluation and utilization of literature for children.

809. Advanced Methods of Teaching Language Arts
Fall, Winter, Spring, Summer. 3(3-0) Graduate students. Survey of principles and instructional methods for teaching listening, speaking and writing abilities and skills at the elementary and middle school levels, examination of current resources and resources through self-selected area of special study.

809A. Children’s Writing in the Elementary and Middle School
Winter. Summer. 3(3-0) ED 808. Methods for stimulating children’s expression in a variety of modes of writing research on growth in skills of organization, vocabulary, sentence and paragraph development, and mechanical skills.

810. Teaching Elementary School Social Studies
Fall, Winter, Spring, Summer. 3(3-0) Experience in teaching and approval of department. Methods and materials used in teaching social studies in kindergarten through the eighth grade.

811. School Learning II
Fall, Winter, Spring, Summer. 3(3-0) ED 410 or ED 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) ED 412 or approval of instructor. Survey of research with special attention to applications to teaching and school programs.

812B. Psychology of Adolescence in the Schools
Fall, Spring, Summer. 3(3-0) Adolescents growth and development with emphasis on physical maturation, intellectual growth self-concept development, impact of family and peer relations, social-emotional adjustment, problems teachers face with adolescence.

812C. Psychology of the Gifted Student
Spring. 3(3-0) ED 812 or ED 812B. This course will focus on the psychocultural characteristics of gifted and talented students, the efficacy of administrative provisions, the development of creativity, and special talents.

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 life factors which affect social-emotional development, implications for teaching.

814. Classroom Discipline
Summer. 3(3-0) Experience in teaching or pupil personnel work. The study and practice of positive strategies for the resolution of classroom discipline problems.

814A. Interpersonal Process Recall
Fall, Summer. 3(3-2) A structured training model designed to teach facilitation of interpersonal communication through learning communication skills, examining interpersonal stress, and self-study of one’s own video-recorded behavior. Theory and research issues will be presented.

815B. Principles of Guidance and Personnel Services
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 preparation experience with Michigan Department of Vocational Rehabilitation.
815E. Rehabilitation Internship
Winter, Spring. 3 to 21 credits. May reenroll for a maximum of 21 credits. ED 815F.
Supervised graduate internship in rehabilitation counseling.

815F. Overview of Rehabilitation
An overview of the impact areas of job placement for the handicapped. Presentations on placement models, state agency approaches, pertinent legislation, and employer, counselor, and client perspectives.

815G. Assessing Vocational Potential
Spring. 3(3-0) ED 815F.
This course covers techniques for assessing the vocational potential of disabled individuals, including the use of vocational tests, medical information, and occupational information for an integrated vocational appraisal.

815H. Assessing Employer Needs
Fall. 3(3-0) ED 815F, ED 815G.
This course focuses on surveys of employers, gaining entry for counseling, presenting oneself, the client, and agency, and assisting clients in their search for employment.

815J. Research Applications in Rehabilitation
Fall, Winter, Spring, Summer. 3(3-0) ED 815E concurrently or approval of department.
This course involves an individual study and research related to an aspect of rehabilitation.

815K. International Aspects of Rehabilitation and Special Education
Spring. 3 credits. May reenroll for a maximum of 5 credits. ED 815J.
This course examines international dimensions of rehabilitation and special education, including developmental perspectives, current status and issues in the field.

815L. Vocational Evaluation in Rehabilitation
Winter. 3(3-0) ED 815D.
Vocational work evaluation utilizes work, real or simulated, as the focal point for assessment and vocational counseling to assist individuals in vocational development. Majority of classes are held in an off-campus rehabilitation center.

815M. Legal Rights of Handicapped People and Their Counselors
Spring. 3(3-0) ED 815D.
This course covers legal issues important to physically and mentally handicapped people.

816. Procedures in Guidance
A. Career Development Services
Fall, Winter, Summer. 3(3-0) ED 815B; or concurrently.
Analysis of group and individual methods providing information related to career planning, educational opportunities, and person-social concerns. Utilization of information from placement agencies, follow-up studies, and community surveys in curriculum revision is stressed.

B. Counseling and Guidance in the Classroom
Fall, Winter, Spring. 3(3-0) ED 815B; or concurrently.
Examination of factors underlying counseling activities of teachers and administrators. Basic principles, methods and techniques related to diagnosing, interviewing, consulting, and referring counselors for special assistance are included.

C. Practice in Group Counseling
Techniques
Winter, Summer. 3(3-0) ED 816B.
Emphasis upon the development of counseling and related behavior disorders in children and adolescents. Students participate in a group to examine in depth their own self-image and motives. Didactic content is related to experiences in the group.

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

817A. Introduction to Urban Counseling
Fall. 3(3-0) ED 819A and ED 819B concurrently.
This course addresses problems in the urban environment relating to health, socio-cultural, economic, educational, legal, and vocational life, as manifested by urban residents and their resolution through counseling. Emphasis on the system and personal change mechanisms.

817B. Systemic Counseling
Fall. 3(3-0) Approval of department.
Focusing on the theory and philosophy of systemic counseling, issues pertaining to systemic change will be examined.

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

817D. Urban Career Development System Analysis
Winter. 3(3-0) ED 817A and approval of department.
This course examines critical theories of vocational (career) development and interest inventories for use with urban residents, investigation of barriers to urban residents, and development of alternative models.

817E. Urban Counseling in the Elementary School
Summer. 3(3-0) Approval of department.
This course involves a seminar on issues and impact of the urban environment on the elementary child's personal and social responsibilities with implications for the role of the counselor.

817F. Sextism, Racism and Alienation in the Therapeutic Process
Spring. 3(3-0)
This course involves historical perspective, definition, manifestations and consequences of sexism, racism and alienation in promoting social inequality. Emphasis is on counseling interventions to address needs of alienated groups.

817K. Community Evaluative Research
Spring. 3(3-0) ED 817A, ED 867, and ED 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.

818A. Behavior Disorders in Children
Spring. 3(3-0) 12 graduate credits in educational psychology or a related area.
Characteristics, causes and treatment of school related behavior disorders in children considered within a developmental framework.

818B. Roles and Functions of School Psychologists
Spring. 3(3-0) Admission to Ed.S. program or approval of instructor.
The role and function of the school psychologist in the assessment, reporting of findings, and consultation and social work agencies.

818C. Laboratory and Field Experience in School Psychology
Fall, Winter, Spring. 3 to 15 credits. May reenroll for a maximum of 15 credits. Approval of instructor.
Supervised experience in a public school setting involving individual psychological instruments, pre-screening of written reports, participation in a public school setting, and administration of psychological assessments.

819A. Counseling Practice
Fall, Winter, Spring. 3 credits. May re-enroll with approval of department.
The practice of counseling and guidance in schools, community colleges, and rehabilitation agencies.

819B. Introduction to Counseling Theory
Fall. 3 credits. 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
Fall, Winter, Spring. 3 credits. Approval of instructor.
The use of occupational, educational, and social information in counseling interviews and in guidance programs.

819D. The Counseling Process
Winter. 3 credits. ED 819A, ED 819B.
The counseling process with emphasis given to students learning a systematic approach to counseling. Emphasis is on interviewing skills in a counseling laboratory.

819E. Counseling and Consulting Strategies
Spring. 3 credits. ED 819A and ED 819B.
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
Fall, Winter, Spring. 6 credits. ED 819A and ED 819B.
Supervised counseling experience in selected schools and community agencies, and individual consultation with instructor.

819G. Counseling Practicum II
Fall. 6 credits. ED 819F.
Continuation of ED 819F.
820. Principles of Curriculum Improvement
Fall, Winter, Spring, Summer. 3(3-0)
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)
ED 820.
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.

821E. Curriculum for Nonformal Education
Winter, Summer. 3(3-0) ED 820, ED 822B or ED 822A.
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.

821F. Agricultural Education in Rural Development
Spring. 3(3-0)
Agricultural education at various levels and in different forms for rural development. Formal and non-formal education; planning, conducting and evaluating. Case studies from selected developing countries.

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(2-2) Approval of department.
Overview of extent, origins, forms, purposes, content, sponsors, methods and guiding theories of continuing education and its significance for individuals, institutions, communities and nations.

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.

822J. 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; apprenticeship, and general education work experience. Emphasizes organization, administration, instructional procedures, coordination techniques, club activities, and evaluation of cooperative educational education.

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

822R. Developing Occupational Curriculum in Two-Year Colleges
Fall, Winter. 3(3-0) ED 822N, ED 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, Summer. 3(3-2) Teaching experience.
Design and use of simulations and instructional games in the curriculum. Development of social skills, values and affects.

824. Process of Instructional Development
Winter, Summer. 3(3-0)
Application of a validated instructional systems approach to the development of practical solutions to critical teaching and learning problems for teachers, administrators, and media specialists.

825. Seminar in Instructional Television
Spring, Summer. 3(3-0) Approval of department. Interdepartmental with the Department of Telecommunication.
Television use in instruction, particularly as it concerns the learner, the classroom teacher, the instructional designer and the administration.

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, 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.

828B. Teaching Adult and Young Farmer Classes in Agriculture
Fall, Summer. 3(3-0) Approval of department.
Objectives of adult education in agriculture, organizing and promoting classes, course planning, instructional procedures, follow-up and evaluation.

828C. Continuing Education: Learning Theory and Program Development
Winter, Summer. 3(3-2) Twelve credits in education, approval of department.
Theories of adult learning and community development, their implications for design and management of continuing education, and alternative methods for integrating social and physical environments, materials, media and personnel to increase knowledge and enhance personal and social maturity.

828D. Instructional Methods in Business and Industry
Winter, Summer. 3(3-0) Approval of department.
Designed for personnel responsible for the training function. Various instructional methods examined with emphasis on the conference method of problem solving.

828E. Principles and Problems of Instruction in Higher Education
Fall, Summer. 3(3-4) Approval of department.
Instructional problems in the various areas of higher education with emphasis on common principles underlying each of them.
Descriptions – Education of Courses

828F. U. S. Society and Higher Education
Fall, Spring, 3(3-0)
The U. S. society and its relationship to higher education and the chronic diseases and disabilities associated with these systems. Emphasis on medical lectures by physicians.

829. Medical Information for Human Service Professionals
(429.) Fall, 3(3-0) Approval of instructor.
Provide a basic understanding of the major body systems and instructional strategies related to kindergarten through adult education programs. Program content and organization for developing awareness, exploration, decision making and planning skills.

830A. Special Methods and Materials of Teaching
Fall, Winter, Spring, Summer, 3(3-0)
May reenroll in 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.
Develop an understanding of the basic principles and techniques of effective instruction in the various subject-matter areas in the school curriculum. Students will be expected to investigate research as it relates to the improvement of instruction in a special field of study.

830B. Methods in Reading at the Secondary Level
Fall, Winter, Spring, Summer, 3(3-0)
Graduate students; teaching experience; approval of department.
An analysis of the reading problems of high school and college students. Material and procedures for identifying the reading attainments and needs with emphasis on the individual. Basic principles and techniques for improving reading skills.

830C. Problems in Elementary Reading Instruction
Fall, Winter, Spring, Summer, 3(3-0)
Graduate student in education; undergraduate methods course in reading; approval of department.
For experienced teachers. Includes consideration of the basic aspects of ability to read, desirable reading attitudes, habits, and skills. Practices and materials used in reading programs are examined and appraised. Outstanding investigations dealing with problems in this area are studied and evaluated.

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

830E. Diagnosis of Reading Difficulties
Fall, Winter, Spring, Summer, 3(2-2)
Graduate students in education; ED 830C or ED 830D; approval of department.
Courses and types of reading retardation are considered, and procedures for working with retarded readers are examined. Laboratory experiences in administering and interpreting standardized and informal tests are provided.

830F. Clinical Practice in Remedial Reading
Fall, Winter, Spring, Summer, 3(2-2)
Graduate students in education; ED 830C or ED 830D; ED 830E recommended; approval of department.
Students work with individual cases, observe and practice group procedures in the University reading clinic.

830G. Methods of Teaching Agricultural Mechanics
Winter, 3(3-0) Approval of department.
Methods of instruction including program planning, scheduling, use of teaching aids, management of buildings, facilities and equipment; selection, organization, and evaluation of activities in farm mechanics.

830H. Seminar in Developmental Reading
Fall, Winter, Spring, Summer, 3(3-0)
ED 830F.
Focuses on subject matter of reading and reading instruction factors which psychologically influence the acquisition of reading skills, the implementation of developmental reading programs and evaluation of such programs.

830I. Seminar in Diagnostic and Remedial Reading
Fall, Winter, Spring, Summer, 3(3-0)
ED 830F.
Focuses on the psychological and physiological nature of reading retardation, the relationships between clinical reading programs and the larger curriculum environment, and the role of the reading diagnostician.

831A. Effective Use of Instructional Media
Fall, Winter, Spring, Summer, 3(3-0)
ED 431A.
Use of a range of instructional media within the context of a systematically planned program of objectives, learning principles, methods and evaluation.

831B. Graphics Design and Use in Instruction
Fall, Winter, Spring, Summer, 3(3-0)
ED 831A; approval of instructor.

831C. Photography in Instruction
Fall, Summer, 3(3-0) ED 831B; approval of instructor.
Design, production, and use of photographic materials for instruction. Production of photographs, slides, films, overhead transparencies, sound tapes, and motion pictures. 35mm still camera (preferably a single lens reflex) required.

831D. Instructional Materials in Vocational and Practical Arts Education
Winter of odd-numbered years, Summer, 3(3-0) Approval of department.
For teachers of agriculture, business, home economics, industrial arts and vocational-industrial education. Selection, preparation and use of didactic materials that characterize shop and laboratory instruction.

831F. Instructional Cinematography
Winter, Summer, 3(3-0) Approval of instructor.
Potentials and limitations of motion pictures for instructional and informational programs. Writing and editing film proposals, scripting, filming techniques, sound, animation, composition, film editing. Super 8mm format used.

832. Advanced Methods and Materials in Special Education
C. Learning Disabilities
Winter, Summer of odd-numbered years, 3(3-0) ED 484A, ED 485A, and ED 898C.
Approaches to remediation of learning disabilities in the classroom. Identification, evaluation, methods, materials, aids and programs.
D. Mentally Handicapped Children and Youth
Winter, 3(3-0) ED 428A, ED 428B, ED 428C.
An analysis of research, trends, and programs in the area of mental retardation. Emphasis upon the relationship these factors have to problems of curriculum, teaching methods, guidance of students, and general classroom management.
E. Emotionally Impaired
Summer, 3(3-0) ED 432A, ED 432B, ED 432C.
Review and analysis of recent research findings, intervention strategies, and curriculum development applicable to emotionally impaired children and youth.
F. Pre-vocational/Vocational Curriculum for SEI/Autistic Students
Spring, 3(3-0) Approval of instructor.
Overview of autism and rehabilitation services. Assessment procedures, placement criteria and pre-vocational/vocational curriculum. Skill development for severely emotionally impaired autistic students.

834. Teaching Elementary School Mathematics
Fall, Summer, 3(3-0) Experience in teaching and approval of department.
Advanced methods and materials used in teaching mathematics concepts in the elementary school.

835. Teaching Elementary School Arithmetic
Spring, Summer of even-numbered years, 3(3-0) Experience in teaching and approval of department.
Advanced methods and materials used in teaching concepts of informal geometry, coordinate geometry, metric geometry, transformational geometry and measurement topics.

836. Teaching Elementary School Science
Spring, Summer, 3(3-0) Experience in teaching and approval of department.
Advanced methods and materials used in teaching science concepts of informal biology, coordinate geometry, metric geometry, transformational geometry and measurement topics.

837. Teaching Elementary School Social Studies
Spring, Summer, 3(3-0) Experience in teaching and approval of department.
Advanced methods and materials used in teaching social studies concepts of informal history, coordinate geometry, metric geometry, transformational geometry and measurement topics.

838. Teaching Elementary School Language Arts
Spring, Summer, 3(3-0) Experience in teaching and approval of department.
Advanced methods and materials used in teaching language arts concepts of informal grammar, coordinate geometry, metric geometry, transformational geometry and measurement topics.
836. Elementary Education: School Mathematics Instruction
Winter, Summer. 3(3-0) Experience in teaching and enrolled in mathematics education.
Review of the literature— theoretical and research on instruction in school mathematics including planning, group instruction, individual instruction, evaluation and instructional materials.

837A. Supervision of Student Teaching
Summer. 3(3-0) Approval of department.
Designed to assist supervising teachers in guidance of student teachers. In addition to a general overview of problems of student teaching, the following topics will be studied: trends in teacher education, orientation of student teachers to student teaching, relationships between supervising teachers and college personnel, conferences with student teachers, and evaluation of student teaching.

837A. Classroom Analysis
Fall, Winter, Spring. 3(3-0) Admission to M.A. in Classroom Teaching Program (MACT).
Development of procedures and skills essential for analyzing and improving teaching performance. Students will establish programs of self-modification where needed. Offered only in an off-campus setting.

837B. Instructional Development
Fall, Winter, Spring. 2 to 4 credits.
May re-enroll for a maximum of 12 credits. ED 838A.
Designed to improve a teacher's effectiveness in classroom instruction through individualized projects. Offered only in an off-campus setting.

837C. Classroom Synthesis
ED 838B; 36 credits applicable toward the MACT.
Designed to refine one's personal educational philosophy, and establish long and short-term goals for improvement of teaching effectiveness. Offered only in off-campus setting.

IDC. Subhasahin Africa Seminar
For course description, see Interdisciplinary Courses.

839. Program Development in Distributive Education
A. Principles and Organization
Fall, Summer. 3(3-0)
Goals, historical background, and trends; contributions to individual development and manpower needs; program organization for secondary, post-secondary, and adult levels; overview of curriculum and instructional strategies; program evaluation.
B. Curriculum Development
Winter, Summer. 3(3-0); ED 838A or approval of department.
Adapting content of marketing and related disciplines to develop occupational competencies; selection of learning experiences; materials and media; development of performance goals related to career objectives; scope and sequence patterns.
D. Seminar in Distributive Education
Summer. 2 to 3 credits. Advanced graduate standing or approval of department.
Focus on current issues and problems, curriculum development projects, and research; emphasis upon individual investigations and writing.

840. Improving Instruction in Business Education
Improving instructional processes through research, including planning, group instruction, individual instruction, evaluation and instructional materials.
A. Typewriting and Office Procedures
Summer. 3(3-0) Experience in teaching.
B. Shorthand and Transcription
Summer. 3(3-0) Experience in teaching.
D. Distributive Subject
3(3-0) Experience in teaching.
Selecting appropriate teaching strategies; use of the project method; laboratory simulations; on-the-job training; youth organizations; and other methods; evaluation of student achievement.

841. Driver and Traffic Education
A. Innovations in Driver and Traffic Education
Fall. Summer of odd-numbered years.
3(3-0)
Introduction of new classroom programs in odd-numbered years.
B. The Highway Transportation System
Spring. Summer of even-numbered years.
3(3-0)
Overview of the development, management, and operation of the highway transportation system and its impacts for the traffic safety educator.
C. Principles of Traffic Communications
Winter. Summer of odd-numbered years.
3(3-0)
Specialized problems involved in traffic safety communications in a transportation centered 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
Fall. Summer of even-numbered years.
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 8 credits. Prior course in research or approval of department.
Emphasis on review of research and development projects and application to business education program; study of design particularly to student's personal research interests.

843. Program Development in Office Education
A. Strategy and Structure
Fall, Summer. 3(3-0) Twelve graduate credits in Business or Vocational Education or approval of department.
Criteria of vocational office education planning/organizing a program; curriculum patterns including block-time and senior intensive; content scope and sequence; program evaluation; special attention to legislation and curriculum research.
B. Classroom Systems
Winter, Summer. 3(3-0) Approval of department.
The initiation of new classroom systems in office education, the scope and sequence in office education systems, their curriculum content and instructional objectives. Emphasis on follow up and evaluation design.
C. Seminar
Spring. 2 or 3 credits. Advanced graduate standing or approval of department.
Focus as needed on current issues and problems, curriculum development projects, contemporary research. Emphasis on individual investigations and writing.

845L. Law Focused Education: Methods and Materials for the Social Studies
Winter, Spring, Summer. 3(3-0)
Undergraduate course in Social Studies methods or approval of instructor.
Techniques for infusing and teaching law related concepts within school social studies programs. Emphasis placed upon the identification and development of materials for use in the classroom.

846. Specialized Methods and Materials for Teaching Elementary Science
Fall, Spring, Summer. 3(3-0) Experience in teaching; approval of department.
Develops additional competency in science education for the experienced teacher at elementary and middle levels. Specialized methods for individual and group instruction are emphasized and evaluated.

847. Seminar in Elementary Science Education I
Winter, Summer. 3(3-0) Experience in teaching; ED 325F or ED 846 or approval of department.
Philosophical and psychological concepts relevant to the objectives and implementation of science education and a review of research in teaching science at the elementary level.

848. Individual Problems in Elementary and Middle School Science Education
Fall, Winter, Spring. 1 to 3 credits. May reenroll for a maximum of 6 credits. ED 847 or ED 848, teaching experience.
Identification of one or more problems in elementary or middle school science to be studied independently. Problem analysis would typically include readings, action research and original composition.
849. Trends and Issues in Language Arts
Fall, Summer of odd-numbered years.
3(3-0) ED 830A.
To investigate and criticize research in language arts programming and instruction.

850. The Teacher and Administrative Leadership
Fall, Winter, Spring, 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 role in administration.

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

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 ED 850 or approval of department.
B. Vocational Education Programs
Summer. 3(3-0) Twelve graduate credits in Education including ED 850 or approval of department.
C. Administration of Pupil Personnel and Guidance Programs
Spring. 3(3-0) ED 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.

854. Environmental Education in the School
Spring, Summer. 3(3-0)
Environmental issues and their implications for educational practices and policies. The role of the school in developing environmental consciousness.

855. Research in Educational Administration
Fall, Winter, Spring, Summer. 3(3-0)
ED 851A, ED 851B, ED 867.
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. Creativity in Education
Fall. 3(3-0) Teaching Experience.
Definitions, manifestations, processes and theories of creativity, experiences with modes of creative expression and problem solving techniques. Development and application to the education profession. Field trips may be required.

857. Futuristics and Education
Spring, Summer. 3(3-0) Teaching experience.
Current educational programs in futuristics. Development of concepts, materials and programs related to education in and for the future. Proposal methodology for the future.

858A. Experiential Teaching and Community/Resources
Winter, Summer. 3(3-0) Graduate standing, approval of instructor.
Presentation of Community as a concept basic to an experiential teaching model. Philosophical, psychological, learning and instructional theory related to an experiential model.

858B. Application of Community Resources for Learning
Fall, Summer. 3(3-0) ED 858A or approval of instructor.
Methods of obtaining, organizing and using community resources in instructional settings. Development of community-based instructional units.

859. Seminar on Global Education
Fall, Spring, Summer. 3(3-0) Approval of instructor.
Issues bearing upon the increasing global interdependence of people and nations; instructional materials and strategies designed to develop global perspectives in American elementary and secondary schools.

861. 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 organizational aspects of curriculum study in and for the future.

862. Elementary Education Trends and Current Research
Fall, Winter, Spring. 3(3-0)
Completion of 27 credits of graduate coursework 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.

863. Trends and Issues in Children's Literature
Winter and Summer of odd-numbered years. 3(3-0) ED 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.

864. The Teaching of Critical Reading
Winter and Summer of even-numbered years. 3(3-0) ED 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.

865. Principles of Educational Measurement
Winter, Summer. 3(3-0) ED 464 or ED 465, ED 869.
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.

866. Appraisal of Individual Intelligence and Personality
A. Individual Measurement--Binet
Winter, Summer. 3(3-0) ED 464 or ED 465 or PSY 415; approval of department.
884. Laboratory and Field Experience in Education
Fall, Winter, Spring. Non-Formal Education for Rural Development
Non-formal, extension, continuing education is planned for the non-formal, adult education program. Focuses upon the issues and problems of rural development. Emphasis will be placed upon educational planners to cope with them. It is designed to expand information and understanding of the role of the rural development. Emphasis will be placed upon educational planners to cope with the problems of rural development. Emphasis will be placed upon educational planners to cope with the problems of rural development.
889D. Psychoeducational Diagnosis of the Handicapped
Fall, Spring. 3(3-0) ED 424A, ED 889J or approval of instructor.
Methods, techniques and instruments for identifying and diagnosing academic problems of analysis of formal and informal assessment strategies. Interpretation of diagnostic profiles.

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; presentation of theoretical and applied issues relating to the contents 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 special education tax, constituent district reimbursement policies and approaches to special education budgeting.

889I. Seminar: Severely Emotionally Impaired/Autistic
Fall, Winter, Spring. 2(2-0) May reenroll for a maximum of 6 credits. Approval of instructor. Coordination of course work and field experience for the SEI/Autistic emphasis. Information regarding autism, task analysis, curriculum, research.

889J. Introduction to Learning Disabilities
Fall, Winter, Summer. 3(3-0) ED 424A
Comprehensive introduction to the field of learning disabilities including theory, issues, programs, characteristics, terminology, and major components of the law.

889K. The Handicapped Student in the Regular Classroom
Fall, Winter, Spring. 3(3-0) Teacher certification.
Problems and issues involved in educating children in the least restrictive environment (mainstream). Emphasis on legal, attitudinal, and practical factors which influence teachers and students.

889L. Introduction to Education of Gifted Students
Fall, Summer. 3(3-0) Graduate students.
History and theory of educating gifted students. Current developments in the field, promising programs and practices.

889M. Classroom Strategies for Teaching Gifted Students
Spring, 3(3-0) ED 889J or approval of instructor.
Teaching strategies used with gifted students, K-12. Curricular designs and materials for academic areas. Students pursue individual in-depth studies.

889N. The Learning Disabled Adolescent
Fall, Spring. 3(3-0) ED 889D, ED 889J or concurrently.
Assessment procedures and instructional methodology appropriate for learning disabled students. Various programming options and outcomes will be contrasted. Emphasis on instruction in learning strategies.

889P. Special Education Law
Spring. 3(3-0) Approval of instructor.
Analysis of State and Federal legislation, regulations, and litigation as related to special education and impact on administration of these programs. Includes study of current and precedent setting court decisions.

889Q. Special Education Administrative Practices and Problems
Fall. 3(3-0) Approval of instructor.
Major problems in administering special education programs. Current practices of administrators implementing federal and state mandated programs.

890A. Field Experience: Education of Deaf
Spring. 2 to 8 credits. May reenroll 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 reenroll for a maximum of 18 credits. M.A. candidates in special education – emotionally impaired, approval of department. 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 reenroll 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 reenroll 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, Spring. 3 to 12 credits. May reenroll for a maximum of 18 credits. Approval of department. Supervised graduate field experience in educational programs for the blind/deaf.

890F. Field Experience: Learning Disabilities
Spring. 3 to 12 credits. May reenroll for a maximum of 12 credits. Approval of department. Supervised graduate field experience in educational programs for those with learning disabilities.

890G. Severely Emotionally Impaired/Autistic
Fall, Winter, Spring. 3 to 6 credits. May reenroll for a maximum of 18 credits. Approval of instructor. Students spend 3 days a week in a public school setting for severely emotionally impaired/autistic students applying skills learned in related courses.

891A. Independent Study: Education of Deaf
Spring. 2 to 5 credits. May reenroll 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 reenroll 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
Winter, Spring, Summer. 1 to 12 credits. May reenroll 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 Learners
Fall, Spring. 3 to 12 credits. May reenroll 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 reenroll for a maximum of 12 credits. ED 427B, ED 889J, ED 932C. 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 reenroll 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.
Appraising Educational Research
Winter, Summer. 4(4-0)
Appraisal of educational research from a data analytical point of view. Issues of statistical models and experimental design needed to critically examine research.

Illustrations in Children's Books
Spring of even-numbered years; Summer every three years. 3(3-0) ED 806.
Significant aspects of graphic arts pertaining to book illustrations especially those in books for children.

Psychology of Vocational Development
Winter. 3(3-0) Doctoral students in counseling and related fields. Relationship between psychological concepts and vocational development.

Diffusion of Educational Innovations
Fall, Spring. 3(3-0) Approval of instructor.
Operational principles, techniques, and heuristics for gaining and maintaining change in educational and training organizations.

Information Handling Systems
Fall, Spring. 3(3-0) ED 853A or approval of instructor.
Design, implementation and study of information handling systems for print and non-print resources.

Instructional Product Development
Winter. 3(3-0) ED 410 or approval of instructor.
Determining a need for, and designing, developing, evaluating, installing and maintaining instructional products in a variety of settings including schools, universities, business, industry and government.

Master's Thesis Research
Fall, Winter, Spring, Summer. 2 to 12 credits. Approval of department.

Educational Sociology: Seminar
Fall. 3. or 4 credits. Approval of department. Interdepartmental with and administered by the Department of Sociology.

Historical and Comparative Foundations of Education: Advanced Comparative and International Education
Spring. 3(3-0) ED 804E; ED 804F.
Objectives, context, 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.

Educational Psychology Seminar
Fall, Winter, Spring. 3(3-0) May reenroll 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.

Seminar in Research on Teaching
Spring. 3(3-0) Approval of instructor.
Critical survey of five approaches to research on teaching. Students develop a framework for organizing the literature, methods, and issues in the field.

Counseling Supervision in Urban Settings
Fall, Winter, Spring. 3(1-12) May reenroll for a maximum of 9 credits. ED 817C (12 credits).
Development of supervisory skills in relation to the systemic counseling model with urban settings as a focus. Practice in supervising master's level students in Urban Counseling field experiences.

Curriculum Research Seminar
Spring. 3(3-0) ED 867; ED 821A.
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.

Seminar: Curriculum Competencies and Careers
Fall. 3(3-0) Doctoral students in curriculum or approval of department.

Seminar: Curriculum Issues
Spring. 3(3-0) Doctoral students in curriculum or approval of department.
In-depth exploration of the nature, history and significance of several perennial issues such as curriculum balance and curriculum control. Overview of selected current and probable future issues.

Seminar: Curriculum Innovation
Summer. 3(3-0) Doctoral students in curriculum or approval of department.
Theories of and models for curriculum innovation and change. Use of models to effect change. Analysis and evaluation of past and present curriculum innovations. Characteristics and roles of change agents.

Research in Counseling Psychology
Spring. 3(3-0) ED 960B.
Criticism, interpretation and design of counseling research.

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

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.

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.

Research Study in Higher Education Administration
Fall, Winter, Spring, Summer. 1 to 6 credits. May reenroll for a maximum of 6 credits. Doctoral students in Administration and Higher Education programs.
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.

Research in Vocational Education
Winter. 4(4-0) ED 867, ED 869 or approval of instructor.
Research designs appropriate for vocational education. Selection of appropriate statistics, analysis of data using computers, and interpretation of findings.

Comparative Curriculum Studies
Winter. 3(3-0) Advanced graduate students in Education. Comparative study of global issues related to curriculum practices and designs.

Administration of Athletic Medicine and Health
Fall, Winter, Summer. 3(3-0) Graduate students or interscholastic coaches.
Administration of health care in K-12 athletic programs; preventive medicine, legal implications, recognition of trauma and emergency medical management stressed. Growth and development concepts introduced in selection of student athletes.

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.

Community Relations
Winter, Spring, Summer. 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 lawmaking 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 Requirement Prediction Model 1.6, student flow and faculty activity analysis are major tools investigated.

959. Using Standardized Tests for Decision Making  
Fall, Spring. 3(3-0) Approval of department.
School administrative decision-making based on information yielded by standardized tests. Participants will also engage in private consultations with the instructor concerning system or building data.

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.

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

962A. Social Development and Counseling Psychology  
Winter. 3(3-0) Approval of department.
Stages of social development as a counseling construct. Developmental tasks appropriate to life phases. Implications of missing or inadequately passing through a developmental stage.

963A. Psychometric Theory  
Spring of odd-numbered years. 3(3-0)
ED 865, ED 963B.
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.

963B. Problems of Educational Measurement  
Winter of even-numbered years. 3(3-0)
ED 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.

963C. Evaluation of Higher Education  
Spring. 3(3-0) ED 826E.
Ways in which evaluation takes place in higher education, course examinations, grading, comprehensive examinations, teacher evaluation, institutional evaluation, state surveys, and regional and national studies of higher education problems.

963D. Testing and Evaluation in Counseling Psychology  
Winter. 3(3-0) Basic course in standardized tests and measurement.
Analysis and interpretation of selected standardized tests related to vocational counseling of college students. Self-appraisal, case studies and clinical experience under supervision will be emphasized.

963E. Issues in Program Evaluation  
Spring. 3(3-0) Three courses in measurement, evaluation, statistics, or research design.
Issues in program evaluation will include such topics as evaluation and political decision making, external vs internal evaluation, qualitative vs quantitative evaluation, evaluation vs research, and meta evaluation.

9636A. Personality Assessment I  
Winter. 3(3-0) PSY 425, PSY 827, PSY 829, PSY 831.
The application of the MMPI to individuals. Administering and interpreting the MMPI in written and oral form.

9637. Advanced Research Methods in Education  
Fall, Spring. 4(3-1) ED 867 and ED 869, or ED 969B.
Principles and techniques in survey research with limited consideration of content analysis and observational studies. Sampling, instrumentation, data collection, and data analysis.

9639. Quantitative Methods in Educational Research  
B. Advanced Quantitative Methods in Educational Research  
Fall, Winter, Summer. 4(3-1) ED 869 or pretest and approval 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.

970. Readings and Research in Teacher Education and Professional Development  
Spring. 3(3-0) Approval of department.
Literature on research practice in teacher education fields. Issues, problems and skills needed by educational leaders in service and inservice teacher education.

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

972. Multidisciplinary Seminar in Educational Administration  
Fall, Winter, Spring. 3 credits. May reenroll for a maximum of 18 credits. 9 credits of ED 971.
Discussion of generic problems and issues in administration identified and interpreted through selected readings and speakers from the several behavioral sciences.

973. College Student Personnel Administration I  
Fall. 3(3-0) 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(3-0) 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.
976A. Fieldwork Research in Educational Settings I
Fall. 3(3-0) Approval of instructor.
Substantive and methodological issues in planning and conducting fieldwork research in educational settings. Knowledge and skills necessary to evaluate quality of fieldwork research. Critical review of examples of research reports.

976B. Fieldwork Research in Educational Settings II
Winter. 3(3-0) ED 976A or approval of instructor.
Supervised fieldwork research in educational settings. Techniques of data collection and analysis. Research question formation, entry, evidence, and ethics.

976C. Fieldwork Research in Educational Settings III
Spring. 3(3-0) ED 976B.
Supervised analysis and reporting of fieldwork research data. Literature review, model construction, analysis of field data, and other data. Preparing narrative reports addressed to scientific audiences and to audiences of practitioners.

977. Teacher Assessment and Development
Fall. 3(3-0) Completion of 27 credits at graduate level.
Concepts of teacher assessment, techniques and instruments for analysis of teaching, current assessment practices, and strategies for teacher development based on needs.

978. Professional Lectures in Educational Administration
Fall. 3(3-0) Graduate students in Educational Administration.
Lectures by faculty in Educational Administration in individual faculty research and service interests, exploration of recent research and other scholarly publications.

979. Community College Administration
Fall, Spring, Summer. 3(3-0) ED 922A.
Functional areas of community college administration with emphasis upon instruction, finance and student services including the importance of local, state and federal influences.

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, observations, 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 good interpersonal relationships, self-understanding, an understanding of psychodynamics, and test interpretation as preparation for assuming counseling responsibilities. Approach is didactic and experimental with limited contacts with clients.

986. Group Processes in Counseling Psychology
Fall. 3(3-0) Graduate students.
Didactic-experiential format to explore group dynamics, interpersonal processes within groups, differential effect of various leadership styles, facilitation of group interaction, impact of different theoretical approaches, application to counseling/school settings.

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

986C. Counseling Practicum III
Spring. 3(3-0) ED 985B.
Supervised experience working with college students in a counseling relationship in the residence halls. Individual supervision, increased client contact hours, and participation in staff activities.

987. Seminar: Continuing Education and Social Policy
Fall. 3(3-0) May reenroll for a maximum of 6 credits. Majors 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.

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

988. Behavioral Counseling Laboratory
Fall, Winter, Spring. 1 to 6 credits. May reenroll 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.

989. Laboratory and Field Experience in Counseling Psychology
Fall. 3(2-4) Counseling psychology majors.
Applied aspects of counseling through case conferences and presentations of cases by representatives of various counseling orientations.

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. 3 to 12 credits. May reenroll for a maximum of 18 credits. Approval of department.
Supervised graduate practicum in special education administration.

991. Higher Education Internship
Fall, Winter, Spring, Summer. 3(0-9) May reenroll for a maximum of 12 credits. Doctoral and Educational Specialist students in Higher Education and 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.

996. Physiological Measurement in Counseling Psychology
Spring. 3(2-2) ED 414 and approval of department.
Physiological measurement in counseling psychology treatment, training, and research.

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

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**ELECTRICAL ENGINEERING AND SYSTEMS SCIENCE**

**College of Engineering**

**Electrical Engineering**

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

300. Electric Circuits I
Fall, Winter. 4(4-0) MTH 113.
Current voltage and power, DC and transient circuit analysis, forced response, sinusoids and the phasor concept, Bridges.

301. Electric Circuits II
Winter, Spring. 4(4-0) E 300, MTH 214.
Sinusoidal steady-state response, Average power and rms concepts, Complex frequency response, magnetically coupled circuits, Two-port networks, Transfer functions.

302. Basic Electronic Circuits
Spring, Summer. 4(4-0) E 301, MTH 215.
Voltpamper 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 300; E 301 concurrently.
Electronic test equipment and measurement fundamentals. Experimental verification of topics covered in E 300 and E 301. Computer-aided circuit analysis and design.