### 852. Economic Problems of Underdeveloped Areas
Spring, 3-4 credit hours 
EC 320, EC 324, or approval of department.
Overcoming problems relating to early stages of economic development; investment priorities; mobilizing savings, balance of payment considerations; and policies and programs of various types.

### 853. The Industrial Revolution in Europe
Course offered in even-numbered years, 3-4 credit hours 
EC 318, EC 324. Interdepartmental with the Department of History.
The precondition that led to the momentous changes in agriculture and industry in Europe from 1700-1914.

### 857. Wage Theory
Fall, 3-4 credit hours 
EC 320, EC 324, or approval of department. Interdepartmental with the School of Labor and Industrial Relations.
Advanced analytical tools of warfare determination; labor market research; economic effects of collective bargaining upon the national wage structure, output, employment, distribution of national income, the price level, nature and effects of government wage policies.

### 858. Collective Bargaining
Fall, Winter, Spring, 3-4 credit hours 
EC 305 or approval of department. Open to graduate students in economics and related fields such as labor and industrial relations, psychology, sociology, anthropology, political science, business, and history. Interdepartmental with and administered by the School of Labor and Industrial Relations.
Problems and issues in the administration and negotiation of collective bargaining agreements; includes both economic and noneconomic aspects of industrial relations policies and practices.

### 860. Economics of the Firm
Fall, Winter, Summer, 4-4-4 credit hours 
Graduate students in Business Administration. Not open to Economics majors.
Analysis of the firm: Problems facing management; competition in use of resources; optimal combinations of products, pricing, competitive forces in markets affecting the firm.

### 861. American Economy
Fall, Winter, Spring, 4-4-4 credit hours 
Thirteen credits in MBA core program, Not open to Economics and Agricultural Economics majors.

### 862. Business and Public Policy
Winter, 4-4-4 credit hours 
EC 860 or approval of department. Not open to majors.

### 877. Statistical Inference in Economics I
Fall, 3-4 credit hours 
EC 812A or EC 801; STT 443 or STT 863; or approval of department. Interdepartmental with the departments of Agricultural Economics, and Statistics and Probability.

### 878. Statistical Inference in Economics III
Spring, 3-4 credit hours 
EC 877 or approval of department. Interdepartmental with the departments of Agricultural Economics, and Statistics and Probability.
Validation and application of dynamic econometric models. Bayesian approach to estimation problems. Recent developments in econometrics.

### 880. Organization and Control in the Political Economy: Institutions and Theory
Winter, odd-numbered years, 4-4 credit hours 
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, even-numbered years, 4-4 credit hours 
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.

### 890B. 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. Writing doctoral dissertations in the appropriate areas are encouraged to participate in workshop and may do so while registered EC 999.

### 891. Topics in Applied Econometrics
Spring, 3-4 credit hours 
EC 835 or EC 877.
Topics in applied econometrics with particular attention to problems of testing hypotheses in the context of economic models.

### 895. Graduate Reading in Economics
Fall, Winter, Spring, Summer, 1-6 variable credit.

### 900. Selected Problems in Advanced Microeconomic Theory
Fall, Winter, Spring, Summer, 3-6 credit hours 
May be repeated for a maximum of 12 hours. EC 812A, EC 812B, EC 812C, EC 813C. 
Advanced applications of economic methodology to the analysis of household and firm behavior, risk, uncertainty, and transaction costs.

### 901. Selected Problems in Advanced Macroeconomic Theory
Fall, Winter, Spring, Summer, 3-6 credit hours 
May be repeated for a maximum of 12 hours. EC 813A, EC 813B.
Analysis of the behavior and interaction of multilmarket systems.

### 927. Methodological Approaches to Research
Fall of each even-numbered years, Summer of odd-numbered years, 2-4 credit hours 
Two terms of graduate study in social science of 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.

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

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

### EDUCATION - Descriptions of Courses

#### 101A. Exploring Elementary Teaching
Fall, Winter, Spring, 3-4 credit hours. 
Prelicensure 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
Fall, Winter and Fall of even-numbered years, Spring of odd-numbered years, 2-4 credit hours. 
Two courses in this series are included in computation of GPA and MAPS but are not included in the 180 credits required for graduation.
Opportunities in teaching industrial education; analysis of students' potentials for this field.

#### 141A. General Industrial Arts
Winter and Fall of odd-numbered years, Spring of even-numbered years, 3-6 credit hours. 
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 even-numbered years, Spring of odd-numbered years. 3(0-6) Approval of department. Handwork, patternwork, carpentry, introductory machinework, finishing. Designed to exemplify, in both organization and equipment, desirable practices in today's secondary schools.

200. Individual and the School
Fall, Winter, Spring, Summer. 3(2-1) Sophomores. Must be admitted to a teacher education program.

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, 124F) 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 resources 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.

R. Industrial Arts (124B) 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.

321A. Curriculum Methods and Materials—Elementary Education Methods
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. Bases, 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(0-6) 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(0-6) ED 200, Juniors. Course to acquaint prospective elementary teachers with content material and methods 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. 3(0-6) 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(0-6) ED 200, Juniors; three terms of ED 200. 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(0-6) 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 Vocal Methods
Fall. 3(2-2) Instrumental music major; MUS 250. (Instrumental music program at elementary level.)

325H. School Music Vocal Methods
Fall. 3(2-2) Approval of the 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 327-A to ED 327H concurrently.

327A-V. Methods of Teaching—Secondary Subject Areas
Specified 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 520; 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, Winter, Spring. 3 credits. ED 200; ED 327 or concurrently.

L. Natural Resources, Environmental Education and Earth Science
Fall. 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
Fall, 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. 3 credits. ED 200; ED 327 or concurrently.

T. Social Science
Fall, Winter, Spring. 3 credits. ED 200; ED 327 or concurrently.

U. Communication
Fall, Winter, 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 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 241 B or approval of department.
Voice 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.

341C. General Electricity
Winter and Fall of even-numbered years, Spring of odd-numbered years. 3(0-6) Approval of department.
Low voltage wiring, household devices and appliances, motor and general maintenance, house wiring, elementary radio, and elementary television. Designed to exemplify a desirable approach to this area in the industrial education program of 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.

409. 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 newspapers and yearbooks.

410. Instructional Design and Technology
Fall, Spring. 2 to 4 credits. May reenroll for a 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, Summer. 4(2-4) 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. 2(0-3) May reenroll for a maximum of 6 credits. Approval of instructor.
Prepares students for leadership roles and responsibilities, including 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 454.
Causes and effects of visual impairments; definitions, statistics and trends; history and legislation; program and services for children and adults through schools, agencies and institutions; medical and psychological aspects.

423B. Curriculum, Methods and Materials for the Visually Handicapped
Fall, Summer. 4(3-2) ED 424A, ED 454.
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 454.
A laboratory course designed to teach the skills of reading and writing standard English Braille using required tools.

423D. Low Vision and Its Facilitation
Winter, Summer. 3(3-0) PSL 323.
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(3-2) ED 423C.
A laboratory course including Nemeth Code of Mathematics; science, music and language notations; preparation of classroom materials; establishing test reference materials. Emphasis upon instruction at the secondary level.

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

423H. Teaching Optacon 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 readers to read print using the Optacon.

424A. Education of Exceptional Children
Fall, Winter, Spring. 3(3-0) ED 424A.
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.

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

425B. Language Development for the Deaf
Fall, Spring. 3(3-0) ED 424A, ED 454.
Theories of language 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, Spring. 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.
Descriptions – EDUCATION of Courses

425E. Manual Communication II
Fall, Winter. 2 to 4 credits. May reenroll for a maximum of 8 credits. ED 425A.
Continued development of skills in total communication for use in educational service.
Facilities, programs, training methods, materials and terminology in education of the physically
handicapped. Field trips to special classes and hospital school programs.

427A. Educational Provisions for the Physically Handicapped
Fall, 3-4H: ED 424A. ED 430.
Facilities, programs, training 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. 3-0: ED 424A.
Characteristics and terminology of basic learning theories and learning disabilities. Educational
practices and programs and major contributors. Field practice with learning disability children.

428A. Psycho-Educational Characteristics of the Mentally Retarded
Fall, Summer. 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 disorders.

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

428C. Educational Procedures for the Mentally Retarded
Fall, Summer. 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, development of learning skills, and the teaching of
non-academic and academic skills.

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

429G. Laboratory Programs in Driver and Traffic Education
Fall, Spring. Summer. 3-0: 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. 3-0: ED 256F.
Organizational and administrative aspects of driver and traffic education as they relate to the
total school program and other specialized programs. Historical and philosophical aspects, evaluation,
related professional organizations, and occupational opportunities.

429J. Personality Factors in Driver and Traffic Education
Winter, Summer. 3-0: ED 250F, PNT 22.
Study of behavior with emphasis on attitudes, motivation, and adjustment and their relationship
to safe driving. Investigation of principles and methods for identifying, understanding, and modifying
unsatisfactory behavior.

429K. Fundamentals of Traffic Law
Spring, Summer. 3-0: ED 250F, PNT 22.
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. 3-0: ED 250F.
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. 3-0: ED 250F, ED 429F.
Philosophical 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. 4-0: 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. 3-0.
Educational media for preschool and inservice teachers, and media specialists. Selection and
utilization of film pictures, slides, filmstrips, 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. Summer. 3-0.
ED 451A 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. 3-0: ED 424A.
Psycho-educational characteristics of the emotionally disturbed and related disorders. Additional
strategies which purport to educate the disturbed child are studied and evaluated.

432B. Remedial Practices with the Emotionally Disturbed
Fall, Winter. 3-0: ED 432A.
Emphasis is on the assessment, diagnosing 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. 3-0: 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. 3-0: Juniors or approval of college. Interdepartmental course 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. 15-15: May
reenroll for a maximum of 30 credits to qualify for different area of certification. 2.00
cumulative grade-point average; ED 327 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. 3-0: 2.00
cumulative grade-point average; ED 327 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 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
ESD 327 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 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. 15-15: ED
School and community participation: Planning, conducting and evaluating instruction in special
education; management of special education programs and seminars; working with other special
education professionals. An off-campus course in selected Michigan locations.

A-58
### 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 or 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 241C or approval of department.
- Development and construction of simple electric motors, radio, and electronic devices. Experimental work 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
- Winter, Spring, Summer. 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. 3 to 15 credits. May reenroll for a maximum of 22 credits. ED 321A.
- 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. Summer. 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. Summer. 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 wide-scale testing programs.

### 465. Testing and Grading
- Fall, Winter, Spring, Summer. 2(3-0) ED 200.
- 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
- Spring. 3(0-6) May reenroll for a maximum of 6 credits. ED 327F.
- 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. 3(0-2) ED 200, ED 327C concurrently or approval of department.
- Principles and practices of using materials and media, instruction and 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(1-6) 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, Summer. 1 to 8 credits.
- May reenroll for a maximum of 8 credits. Approval of department.
- Study on an individual basis in the various fields of emphasis in education.

### 484. Field Experience in Education
- Fall, Winter, Spring, Summer.
- Variable credit. May reenroll for a maximum of 12 credits. Approval of department.
- Supervised undergraduate practicums 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 a field setting as an integrated part of the pre-intern twenty-week block of courses.

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

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

### 490A. Field Experience: Deaf Education
- Fall, Winter, Spring. 2(0-6) ED 436, ED 435B, ED 425C.
- Observation/participation in day classes for hearing impaired learners at elementary, secondary or post-secondary levels. Minimum 60 clock hours.

### 490B. Field Experience: Emotionally Impaired
- Fall, Winter. Spring. 3(1-6) May 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.

### 498C. Field Experience: Mental Retardation
- Fall, Winter. Spring. 3(0-9) May reenroll for a maximum of 6 credits. Approval of department.
- Supervised practicum in an educational program for mentally retarded learners.

### 490D. Aiding Teachers of Visually Handicapped Learners
- Fall, Winter. Spring. 3(0-3) 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 preschool, primary, intermediate and adolescent-aging adult, multihandicapped visually handicapped learners in public and residential school programs.
490F. Aiding Teachers of Blind/Deaf Learners
Fall, Winter, Spring. 1(0-3) May
receive a maximum of 3 credits. Juniors and
major in education of blind/deaf children.
Three supervised experiences side teachers
of blind/deaf children in teaching low-functioning,
preacademic and primary level children.

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

490H. Teaching Daily Living
Skills to Visually Handicapped Learners
Fall, Winter, Spring. 1(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. 40-160 ED 401 A,
ED 424 A. admission to special education, core
students only. Supervised practice in an educational program
for handicapped learners, taken concurrently with
ED 424B and ED 424C.

495. Reading in the Content Areas
of the Secondary Level
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. Summer. 3(3-0)
Approval of department. Problem analysis of timely issues in education
analyzing their legal, historical, sociological, and
philosophical dimensions. Attention oriented to
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. Summer. 3(3-0)
Approval of department. Identification of the
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 801 A,
Approval of department. Educational implications of critical analyses of
contemporary society. Particular attention given to
disparities between ideology and practice.
Building school programs designed to cope with cultural inadequacies.
E. Comparative Educational Philosophies
Winter, Summer. 3(3-0) ED 801 A.
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 801 A.
Critical analysis and evaluation of leading
modern philosophies of education and their
implications for practice, such as: existentialism,
idealism, behaviorism, reconstructionism.

802A. Education in the U.S.A.
Fall. 3(4-2) 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(4-2) ED 802 A 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, Winter, 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. A critical examination of progress
in the evolution of education for goals. Implications of historical knowledge
for present problems.
B. Higher Education in the United States
Fall, Winter, 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, organization, financial, and
the major issues in these areas. Attention is also
given to historical development, current status
with special focus upon the influences of United States
higher education in foreign countries.
C. Educational History: Plato to Pestalozzi
Winter, Summer. 3(3-0) Approval
of department. Deals historically with relation of school
to development of 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. Development of modern education in the last three centuries.
An intensive study of the works of
leaders 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.
F. Education in the Non-Western World
Winter. 3(4-0) 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.

806A. Political Issues in
American Higher Education
Administration
Fall. 3(3-0) Approval of department or
instructor. Current political power and decision-making
issues in higher education. Emphasis given to the
role of the educator in the legislative process and
techniques for improving governmental relations.

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
oral communication and writing skills at the elementary and middle school
levels; examination of current references 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 809 A.
Methods for stimulating children's expression in a
variety of modes of writing and speaking in
oral communication, vocabulary, sentence
and paragraph development, and
methodologies 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 and
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)
Adolescent 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.

813. Social and Emotional Behavior in the Classroom
Fall, Winter, Spring. 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 videotaped 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 pre-practicum experience with Michigan Department of Vocational Rehabilitation.

815E. Rehabilitation Internship
Winter, Spring. 3 to 21 credits. May enroll for a maximum of 21 credits. ED 819E supervised graduate internship in rehabilitation counseling.

815F. Overview of Rehabilitation Placement
Winter. 3(3-0) ED 815D.
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.
Techniques for assessing the vocational potential of disabled individuals including use of vocational tests, medical information, and occupationally relevant information for an integrated vocational appraisal.

815H. Assessing Employer Needs
Fall. 3(3-0) ED 815F. ED 815G.
Techniques for surveying employers, gaining entry for an interview, presenting oneself, client, and agency, and assisting clients in their search for employment.

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

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 psychology or a related area.

B. Counseling and Guidance in the Classroom
Fall, Winter, Spring, Summer. 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 cases for special assistance are included.

C. Practice in Group Counseling Techniques
Winter, Summer. 3(3-0) ED 815B.
Emphasis upon development of counseling skills through analyzing and leading small groups. Students participate in a group to examine in depth their own self-image and motives. Didactic content is related to experiences in the group.

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 consulting with parents. Techniques appropriate for various age levels and problems will be practiced.

817A. Introduction to Urban Counseling
Fall, Winter, Spring. 3 credits. ED 819A and ED 819B concurrently.
Problems—health, socio-cultural, economic, educational, legal, vocational—manifested by urban residents and their resolution through counseling. Emphasis on systems and personal change mechanisms.

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

817C. Urban Counseling Practicum
Fall, Winter, Spring, Summer. 3 credits. May enroll 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 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.
Evaluation of existing theories of vocational (career) development and interest inventories for use with urban residents, examination of barriers to urban residents, and development of alternative models.

817E. Sexism, Racism and Alienation in the Therapeutic Process
Spring. 3(3-0)
Historical perspective, definition, manifestations and consequences of sexism, racism and alienation in promoting social inequality. Emphasis upon creating counseling interventions to address needs of alienated groups.

817F. 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.
History and current status of the field. Current concerns in assessment, reporting of findings, consultation and legal-ethical responsibilities.

818C. Laboratory and Field Experience in School Psychology
Fall, Winter, Spring: 3 to 15 credits. May enroll for a maximum of 15 credits. Approval of instructor.
Supervised experience in a public school setting involving individual psychological instruments, preparation of written reports, participation in educational planning and placement conferences, and consultation regarding handicapped and normal children and youth.
Descriptions – EDUCATION

of Courses

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

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

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

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

819E. Counseling and Consulting Strategies
Winter, 3(3-0) ED 819A and ED 819B
Selected remedial and preventive 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(4-8) ED 819C and ED 819D
Supervised counseling experiences in selected schools and agencies followed by analysis and critique of the experiences through group and individual consultation with instructor.

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

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

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

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

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

821A. Curriculum Construction
Fall, Winter, Spring, Summer, 3(3-0)
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 821A or ED 822B
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.

822A. Community College
Fall, Winter, Spring, Summer, 3(3-0)
Courses, 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 and administration, instructional procedures, coordination techniques, club activities, and evaluation of cooperative occupational education.

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

823. Instructional Simulation
Winter, Summer, 3(2-2) Teaching experience
Design and use of simulations and instructional games in the curriculum for 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 developer 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, Spring, Summer, 3(3-0) Teaching experience
Recent literature, curricular materials, and research in secondary social studies. Individual projects on new curricular developments in one of the following areas: history, geography, civics, economics, sociology, anthropology, or psychology.
<table>
<thead>
<tr>
<th>Course Code</th>
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<tr>
<td>ED 431A</td>
<td>Advanced Methods and Materials in Vocational and Practical Arts Education</td>
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<tr>
<td>ED 432A</td>
<td>Employment and Disabilities</td>
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<td>ED 432B</td>
<td>Summer, odd-numbered year</td>
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<tr>
<td>ED 432C</td>
<td>Review and analysis of recent research findings, intervention strategies, and curriculum developments applicable to emotionally impaired children and youth.</td>
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<tr>
<td>ED 433</td>
<td>Teaching Elementary School Mathematics</td>
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<td>ED 434</td>
<td>Teaching Elementary School Geometry</td>
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**EDUCATION - Descriptions of Courses**

**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(2-2) Twelve credits in Education, approval of department.
Theories of adult learning and community development, their implications for design and management of continuing education, and alternative methods for integrating social and physical environments, materials, media and personnel to increase knowledge and enhance personal and social maturity.

**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 are examined with emphasis on the conference method of problem solving.

**828E. Principles and Problems of Instruction in Higher Education**
Fall, Spring, Summer, 3(3-0) Approval of department.
Instructional problems in the various areas of higher education with emphasis on common principles underlying each of them.

**828F. U.S. Society and Higher Education**
Fall, Spring, 3(3-0)
The U.S. society and its relationship to higher education with emphasis on the current status and future of post secondary education in the U.S.

**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 the chronic diseases and disabilities associated with these systems. Emphasis on medical lectures by physicians.

**829A. Career Education**
Fall, Winter, Summer, 3(3-0)
Historical background, curricular implications and instructional strategies related to kindergarten through adult career education programs. Program content and organization for developing awareness, exploration, decision making and planning skills.

**830A. Special Methods and Materials of Teaching**
Fall, Winter, Spring, 3(3-0) May require in different subject-matter areas for a maximum of 5 credits. Graduate student in education: experience in teaching: undergraduate course in the area: approval of department.
Develops an understanding of the basic principles and techniques of effective instruction in the various subject 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. Graphics Design and Use in Instruction**
Fall, Winter, Spring, Summer, 3(3-0) ED 831A or approval of department.

**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 of 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.
Causes and types of reading retardation are considered, and procedures for working with retarded readers are examined. Laboratory experiences in analyzing 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, the 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.

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**Descriptions continued on A-63**
835. Teaching Elementary School Arithmetic
Spring. Summer. (Fall-Winter-Spring-Summer) Experience in teaching and approval of department.
Advanced courses and materials used in teaching the whole, integral, rational and real number systems including systems of measurement.

836. Elementary Education: School Mathematics Instruction
Winter. Summer. (Fall-Winter-Spring-Summer) Experience in teaching and approval of department.
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. (Fall-Winter-Spring) Approval of department.
Designed to assist supervising teachers in guidance of student teachers. In addition to a general overview of the problems of student teaching, the following topics will be studied: trends in teaching techniques, organization of student teachers into student teaching responsibilities of the supervising teacher, relationships between supervisory techniques and college personnel, conferences with student teachers, and evaluation of student teaching.

838A. Classroom Analysis
Fall, Winter, Spring. (Fall-Winter-Spring-Summer) Admission to M.A. in Classroom Teaching Program (M.A.C.T.).
Development of procedures and skills essential for analyzing and improving teaching performance. Students will establish programs of self-monitoring where needed. Offered in off-campus setting.

838B. 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.

838C. Classroom Synthesis
Fall, Winter, Spring. (Fall-Winter-Spring-Summer) 3 credits.
ED 838B: 15 credits applicable toward the M.A.C.T.
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.

1DC. Interdisciplinary Seminar on Africa
For course description, see Interdisciplinary Courses.

839. Program Development in Distributive Education
A. Principles and Organization
Fall. Summer. (Fall-Winter-Spring-Summer)
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. (Fall-Winter-Spring-Summer) ED 839A or approval of department.
Adapting concepts 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 findings, readings, and experience. Objectives, scope and sequence, diagnosis of learning difficulties, selecting learning activities, evaluating achievement, selecting materials, media and equipment.

A. Typewriting and Office Procedures
Summer. (Fall-Winter-Spring-Summer) Experience in teaching.

B. Shorthand and Transcription
Summer. (Fall-Winter-Spring-Summer) Experience in teaching.

C. Distribution Subject
(Fall, Winter, Summer) Summer. (Fall-Winter-Spring-Summer)
Experience in teaching.

D. Multiple Subject
(Fall, Winter, Summer) Summer. (Fall-Winter-Spring-Summer)
Experience in teaching.

841. Driver and Traffic Education
A. Innovations in Driver and Traffic Education
Fall, Summer. 3 credits.
Description of the broad spectrum of innovations in driver and traffic education. Particular emphasis will be placed on their adoption and application for improving classroom and laboratory instruction.

B. The Highway Transportation System
Spring. Summer. (Fall-Winter-Spring-Summer)
Overview of the development, management, and operations of the highway transportation system and its implications for the traffic safety educator.

C. Principles of Traffic Communications
Winter. Summer. (Fall-Winter-Spring-Summer)
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. (Fall-Winter-Spring-Summer)
Functions of motor vehicle supervision, vehicle licensing, vehicle inspection, vehicle titling and registration, and responsible organizations as legal and administrative methods of driver and vehicle control.

842A. Curriculum and Program Planning
Summer. (Fall-Winter-Spring-Summer)
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
Fall, Winter, Spring. (Fall-Winter-Spring-Summer) Twenty-four graduate credits or approval of department.
Analysis and discussion of selected issues relating to: 1. education for business-traditional manpower needs, legislation, curriculum, training by government and business; 2. curriculum and instruction. Emphasis upon problem-solving and extensive reading.

842D. Seminar—Research in Business Education
Summer. 2 to 3 credits. Prior course in research or approval of department.
Emphasis on review of research and developmental 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. (Fall-Winter-Spring-Summer) Twelve graduate credits in Business or Vocational Education or approval of department.
Critics of vocational office education planning and organizing a program and 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. (Fall-Winter-Spring-Summer)
Introduction of new classroom systems in office education, the scope and sequence in office education systems, their content and instructional objectives. Emphasis on follow up and evaluation design.

C. Seminar
Spring. Summer. 2 to 3 credits. Advanced graduate standing or approval of department.
Focus as needed on current issues and problems; curriculum development projects; contemporary research. Emphasis placed upon the identification and development of materials for use in the classroom.

845. Law Related Education: Methods and Materials for the Social Studies
Winter, Spring. Summer. (Fall-Winter-Spring-Summer)
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. (Fall-Winter-Spring-Summer) Experience in teaching, approval of department.
Develops additional competency in science education for the experienced teacher at the elementary and middle school levels. Specialized methods for instructional and group instruction are emphasized and evaluated.

847. Seminar in Elementary Science Education I
Fall. Winter. (Fall-Winter-Spring-Summer) 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. (Fall-Winter-Spring-Summer)
Individual problems in education, departmental, and subject teaching. May re-enroll for a maximum of 6 credits. ED 846 or ED 847, 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 trends, issues and 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 administration in schools and communities, and teacher's roles in administration.

851. Foundations of Administration
Emphasizes basic administrative theory and research, focuses on current practice and ongoing research to such problems and issues as personnel, plant, finance, community school programs, and instructional improvement. Intended primarily for persons actively preparing for administrative positions in schools and other educational agencies.
A. Theory and Organization
Fall, Winter, Summer. 3(3-0) Approval of department.
B. Practice and Problems
Winter, Spring, Summer. 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.
E. Middle School Administration
Winter, Summer. 3(3-0) Twelve graduate credits in Education including ED 851A, ED 851B, or approval of department.
Organization and administrative aspects of middle school. Emphasis on basic characteristics of a middle school and how the administrator implements these characteristics. Research on middle schools studied.

853. Administration of Educational Programs
Designed to promote the study of application of theory and research in 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, Summer. 3(3-0) ED 851B.
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, or approval of department.
The identification of an individual research problem and the application of principles and techniques for instructional 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 problems of creative thinking. Development and application to the education profession. Field trips may be required.

857. Futures 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. Proposed methodology for the future.

858A. Community Resources and Experimental Teaching
Spring, Summer. 3(3-0) Graduate standing, approval of instructor.
Preparation of Community as a concept basic to an experimental 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 methods and strategies designed to develop global perspectives in American elementary and secondary schools.

860. 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 curricular study, revision, and improvement; procedures and organizational aspects of curriculum planning; key components of new educational curricular designs.

862. Elementary Education Trends and Current Research
Fall, Winter, Spring, Summer. 3(3-0) Completion of 27 credits of graduate course work for a regular program and approval of department.
Advanced graduate students (those nearing completion of the M.A. program or on the doctoral program) and give 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.
B. Individual Measurement: Wechsler
Fall, Spring, Summer. 3(3-0) ED 464 or ED 465 or PSY 415, approval of department.
Measurement of intelligence with the Wechsler scales. Observation, practice, supervision, and interpretation.
C. Personality Assessment in Education
Spring. 3(3-0) ED 464 or ED 465; ED 813 or PSY 427.
Study of general personality structure and methods in personality assessment related to education.

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

868. Evaluation of Programs of Vocational and Practical Arts Education
Fall, Winter, Spring, Summer. 3(3-0) Approval of department.
Evaluation principles and practices in the specialized areas of agricultural, business, and industrial education.
869. Quantitative Methods in Educational Research
Fall, Winter, Spring, Summer. 4(3-1)
Prerequisite and approval of instructor.
Application of descriptive statistical techniques to educational data. Introduction to estimation and tests of hypotheses. Interpretation of statistical reports.

870. Non-Formal Education for Rural Development
Fall, 3(3-0)
General principles relating non-formal education and rural development. Comparison of non-formal, extension, continuing education systems in African, European, American rural societies; impact on continuity and change in rural social systems.

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

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

873. Student Development and College Personnel Services I
Fall. 3(3-0) Majors in College Student Personnel; approval of department.
History, development, philosophy, organization and administration of college student personnel as a profession. Emphasis upon the college student as an individual with a study of services, programs and staff skills needed to provide for his growth, needs and development.

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

875. Student Development and College Personnel Programs III
Spring. 3(3-0) Majors in College Student Personnel; approval of department.
Study of living and learning environments and related staff skills, facilities and programs which affect student behavior and development; examination of personal qualities, professional organizations and other factors associated with being a professional person.

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

877. Educational Program Evaluation
Winter, Summer. 3(3-0) ED 869.
History and current status of program evaluation, including a review of various evaluation models, common problems of implementation and alternative evaluation designs.

878. Research in Higher Education
Fall, Winter, Spring, Summer. 2 to 6 credits. May reenroll for a maximum of 9 credits. Master's students in Administration and Higher Education. ED 867.
Problems and practices in Higher Education Administration. Development of research prospectus, review of significant literature, conduct of research under supervision, and presentation of findings and conclusions.

879. Educational Development Planning: Basic Concepts
Winter. 3(3-0) Approval of department.
Basic concepts of economic, social and political development are studied as they place demands upon educational planners to cope with them. The distribution of development benefits is stressed.

880. Educational Planning and National Development
Spring 3(3-0) ED 879.
Formulation of educational development strategies and plans to deal with crucial national and community development problems. Paying particular attention to meeting the special needs of audiences with special problems.

881. Workshops in Education
Fall, Winter, Spring, Summer. 1 to 6 credits. May reenroll for credit. Approval of department.
Laboratory approach which provides opportunities for experienced educational personnel to concentrate their study on common administrative and supervisory problems.

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

883. Readings and Independent Study in Education
Fall, Winter, Spring, Summer. 1 to 6 credits. Approval of department.
Study on an individual or group basis in the various fields of emphasis.

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

885. Teacher Consultant Skills for Mainstreamed Children
Winter, Spring. 3(3-0) ED 427B. Two years teaching experience.
Consultant skills including role identification, problem-solving techniques, individual and group communication processes, service activities, school survival and study skills curriculum.

886. Development of Self-Understanding
Fall, Winter, Spring, Summer. 3(3-0)
Development of self-awareness and understanding of one's personal and interpersonal styles and is influenced by human relationships in educational settings.

887. Seminar: Continuing Education Leadership in Local Communities
Fall, Winter, Spring, Summer. 3(3-0)
May reenroll for a maximum of 6 credits. Majors or approval of department.
Formal and non-formal community education for adults. Administrative, agency, cooperation, accountability, ethical and political concerns, managing controversy, and balancing objective study with advocacy in programs of personal and community development.

888. Issues in Education of the Handicapped
Spring. 3(3-0) Graduate students.
Designed for graduate non-majors seeking to expand information and understanding of severe and profound hearing loss; educational implications, programs.

889. Issues in Education of Emotionally Impaired
Fall, Spring. 3(3-0) Special Education majors only, approval of instructor.
This seminar focuses on crucial issues related to programming for emotionally impaired students.

890. Issues in Mental Retardation
Spring, Summer. 3(3-0) Approval of department.
Current issues in the area of mental retardation are identified, researched, and discussed.

891. Psychoeducational Diagnosis of the Handicapped
Fall, Spring. 3(3-0) ED 820B 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.

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

893. 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.

894. 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.

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

889. Seminar: Severely Emotionally Impaired/Autistic
Fall, Winter, Spring. 3(3-0). May reenroll for a maximum of 18 credits. Approval of instructor.
Coordination of course work and field experience for the S.E.I./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.

890A. Field Experience: Education of Deaf
Spring of odd-numbered years. 2 to 8 credits. May reenroll for a maximum of 1 credit. 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. 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. 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
Summer, 3 to 12 credits. May reenroll for a maximum of 12 credits. ED 827B, ED 889D, ED 892C.
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 exceptionally 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
Fall, Winter, Spring. 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 or Blind/Deaf
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 889D, ED 892C.
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.

892. Appraising Educational Research
Winter, Summer. 3-4.0.
Appraisal of educational research from a data analytic point of view. Issues of statistical models and experimental design needed to critically examine research.

893. Illustrations in Children's Books
Spring of even-numbered years. Summer every third year. 3-3.0 ED 808.
Significant aspects of graphic arts pertaining to book illustrations especially those in books for children.

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

895. 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.

897. Information Handling Systems
Fall, Spring. 3(3-0). Approval of instructor.
Design, implementation, and study of information handling systems for print and non-print resources.

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

901. Educational Sociology
Fall, Winter. 3 or 4 credits. Approval of department. Interdepartmental with and administered by the Department of Sociology.

904. Historical and Comparative Foundations of Education: Advanced Comparative and International Education
Spring. 3(3-0) ED 853A or approval of instructor.
Objectives, content, methodology, research problems of comparative and international education analyzed. Social and cultural forces affecting educational planning and institution building studied. Agencies involved in international education identified.

911. Educational Psychology
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.

917C. Counseling Supervision in Urban Settings
Fall, Winter, Spring. 3(3-12). May reenroll for a maximum of 9 credits. ED 871C (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.
Descriptions – EDUCATION of Courses

921. 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.

923. Seminar: Curriculum Competencies and Careers
Fall. 3(3-0) Doctoral students in curriculum or approval of department. Identification of generic competencies related to curriculum development. Analysis and development of student competencies. Exploration of careers in the curriculum field.

924. 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.

925. 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.

926. Research in Counseling Psychology
Spring. 3(3-0) ED 965B
Criticism, interpretation and design of counseling research.

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

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

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

935. Seminar in Principles and Practice of Instructional Consultation
Spring. 3(3-0) ED 931A, ED 931B, ED 410, and approval of department. Theoretical framework for consultation with instructional development clients. Case studies, role play simulations, debriefings. Application of the principles and development of consultation strategies and styles.

940. Research Study in Higher Education Administration
Winter, Spring. 1 to 6 credits. May reenroll for a maximum of 6 credits. Doctoral students in higher 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.

941. Research in Vocational Education
Winter. 4(4-0) ED 867, ED 865 or approval of instructor. Research designs appropriate for vocational education. Selection of appropriate statistics, analysis of data using computers, and interpretation of findings.

944. 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.

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

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

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

953. Education Law
Fall, Winter, Summer. 3(3-0) Approval of department. Designed to discover general legal principles and examine laws and making 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.

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

965B. Problems of Educational Measurement
Winter of even-numbered years. 3(3-0) 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.

965C. Evaluation of Higher Education
Spring. 3(3-0) ED 828E. 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.
967. Advanced Research Methods in Education
Fall, Spring. 4(3-1) ED 867 and ED 869, or Ed 696B.
Principles and techniques in survey research with limited consideration of content analysis and observational studies. Sampling, instrumentation, data collection, and data analysis.

968B. Research Analysis in Personnel Work
Winter, Summer. 3(3-0) Approval of department.
Critical review of research and literature in counseling and personnel services.

969. Quantitative Methods in Educational Research
A. Advanced Quantitative Methods in Educational Research
Fall, Winter, Summer. 4(2-1) ED 869 or present 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.
B. Experimental Design in Education
Winter, Spring, Summer. 4(3-1) ED 869B.
Theory and practice in the design, analysis and interpretation of experimental and quasi-experimental research.

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

971. Externship in Educational Administration
Fall, Winter, Spring. 3 credits. May reenroll for a maximum of 27 credits. Present or partial 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 aids, 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.

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.

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

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

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

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

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 986A.
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 986B.
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.

987A. 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 impinging and impacted by government and corporate policy, examination of domestic and foreign examples of interaction between social policy and continuing education.

987B. Seminar: Continuing Education in Higher Education Institutions
Winter. 3(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.

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 or internship in special education administration.

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.

ELECTRICAL ENGINEERING AND SYSTEMS SCIENCE

College of Engineering

Electrical Engineering