990C. Mathematical Economics and Econometrics Workshop
Fall, Winter, Spring. 3 to 10 credits. 812A, 832, or approval of department. Interdepartmental with the Agricultural Economics Department.
Critical evaluation of research reports by staff and students. Students writing doctoral dissertations in the appropriate areas are encouraged to participate in workshop and may do so while registered for 999.

990D. Economic Development Workshop
Fall, Winter, Spring, Summer. 3 to 10 credits. 850, 851, 852 or approval of department.
Critical evaluation of research reports by staff and students. Students writing doctoral dissertations in Development are encouraged to participate in the workshop and may do so while registered for 999.

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

EDUCATION ED

College of Education

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

124. Introduction to Careers in Vocational and Practical Arts Education
Opportunities in teaching agriculture, business, home economics or industrial education and in closely related fields; analysis of student's potentials for these fields.
A. AGRICULTURE
Fall. 2(1-2) Interdepartmental with Agriculture.
D. INDUSTRIAL ARTS
Winter and Fall of even-numbered years, Spring of odd-numbered years. 2(2-0)

141A. General Industrial Arts
Winter and Fall of odd-numbered years, Spring of even-numbered years. 3(0-6)

141B. General Woodwork
Winter and Fall of odd-numbered years, Spring of even-numbered years. 3(0-6)
Approval of department.

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

200A. Educational Psychology
Spring of odd-numbered years. 3(3-0)
Emphasis on the devices used in educational psychology. Same goals as Education 200, but assumes a background in general psychology.

200B. Workshops in Secondary Education
Winter. 2(2-0) May not receive credit for 202B and 200B.
Students select from a variety of single session workshops focusing on psychological and sociological aspects of teaching in secondary schools.

202A. Educational Psychology: Adolescence
Fall. 2(2-0) May not receive credit for 202A and 200A.
Emphasizes cognitive, affective and physical growth of adolescents; theories of learning as applied to secondary education; problems of early adolescence.

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

202C. Alternative Secondary School Structures
Spring. 2(2-0) May not receive credit for 202C and 450. 262B.
On-site examination of a variety of secondary school organizational patterns, together with on-campus analysis of underlying theories of social organization and curriculum construction.

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

241B. General Metalwork
Winter and Fall of odd-numbered years, Spring of even-numbered years. 3(0-8)
Approval of department.

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

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

202A. Teaching Skills Laboratory
Fall, Winter, Spring. 3(2-4) May not receive credit for 202A and 436. 202C.
Competency based instruction and field experience in selected generic teaching skills, including classroom management, secondary reading, data analysis, group and sociometric techniques, instructional planning, assessment and evaluation.

202B. Laboratory in Ethnic Values of Adolescents
Winter. 1(0-5) May not receive credit for 202B and 436. 202A.
Laboratory setting focusing on ethnic values, beliefs and attitudes and their impact on public secondary schools. Participation limited to university students, high school and middle school minority and ethnic students.

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

321A. Curriculum Methods and Materials—Elementary Education
Fall, Winter, Spring, Summer. 3(3-0) 311A, 301A, 200. Must be taken concurrently with or prior to courses in 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(3-0)
Juniors. 200, 302A, 202B. 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.

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

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

325D. Teaching of Social Studies in Elementary Grades
Fall, Winter, Spring, Summer. 3(3-0) 200, Juniors, with consent of department.
To help students develop understanding of philosophy and aims of social studies movement in elementary schools, and ability to further such aims through familiarity with a variety of materials, knowledge of social studies subject matter, and competence in using a variety of methods.
325E. Teaching of Mathematics in Elementary Grades
Fall, Winter, Spring, Summer. 3(3-0)
200, Juniors; MTH 201.
Prepares 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(3-0)
200, Juniors; three terms of Natural Science.
Extends the science education background of prospective elementary and middle school teachers. Emphasis is placed upon methods and materials for teaching science at the elementary and middle school levels.

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

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

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

327A-V. Methods of Teaching—Secondary Subject Areas
Specifics of classroom instruction in the various subject matter fields. Selection of instructional techniques based on recognized course objectives, needs and characteristics of learners, and sound educational principles and policies.
A. Agriculture.
Fall, Spring. 3 credits. 200; 327 or concurrently.
B. Art.
Fall, Winter, Spring. 3 credits. 200;
STA 303, 320; ED 327 or concurrently.
C. Business and Distributive Education.
Fall, Winter, Spring. 3 credits. 200;
337 or concurrently.
D. English.
Fall, Winter, Spring. 3 credits. 200;
320 or concurrently.
E. Latin and Greek.
Fall. 3 credits. 200; 327 or concurrently.
F. Modern Languages.
Fall. 3 credits. 200; 327 or concurrently.
G. Health.
Spring. 3 credits. 200; 327 or concurrently.
H. History.
Fall, Winter, Spring. 3 credits. 200;
327 or concurrently.
J. Home Economics.
Fall, Winter, Spring. 3 credits. 200;
327 or concurrently.
K. Home Economics.
Fall, Winter, Spring. 3 credits. 200;
327 or concurrently.
Fall, Spring. 3(3-0) 200 for education majors; others, approval of department.
M. Industrial Arts.
Fall, Spring. 3 credits. 200; 327 or concurrently.
N. Mathematics.
Fall, Spring. 3 credits. 200; 327 or concurrently.
P. Music—Instrumental.
Winter. 3 credits. 200; 327 or concurrently.
R. Music—Vocal.
Winter. 3 credits. 200; 327 or concurrently.
S. Science.
Fall, Winter, Spring, Summer. 3(2-2)
200; 327 or concurrently.
T. Social Science.
Fall, Winter, Spring, Summer. 3 credits. 200; 327 or concurrently.
U. Communication.
Fall, Winter, Spring. 3 credits. 200;
327 or concurrently.
V. German and Russian.
Fall. 3 credits. 200; 327 or concurrently.

329F. Introduction to Driver and Traffic Education
Fall, Winter. 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)
341B or approval of department.
Work in bench metal, sheet metal, forging, welding, plating, casting, machining of metals. Designed to provide the industrial arts teacher with sufficient breadth and skill to enable him to establish such a program in a secondary school.

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

401. Sociology of Education
Winter, Summer. 3(3-0) SOC 241.
Interdepartmental with and administered by the Sociology Department.
School as a social institution, school-community relations, social control of education, and structure of school society.

402A. Advanced Workshops in Secondary Education
Fall. 2(0-4) May not receive credit for 402A and 327, 302C.
Workshops on a variety of educational issues and problems, such as finance, curriculum construction, advanced evaluation and assessment techniques, advanced teaching methodology, etc.

402B. Seminar in Teaching Secondary Disciplines
Winter. 2(3-0) May not receive credit for 402B and 327, 402A.
Focus on instructional and curriculum problems in specific disciplines of student's major field of study. SEPP staff will work in liaison with various University personnel in helping students explore materials, strategies, and patterns of curriculum organization in major fields.

402C. Senior Secondary Education Proseminar
Spring. 1(2-0) May not receive credit for 402C and 430, 402B.
Focus is on student's personal refinement of educational philosophy. Readings on current historical and philosophical perspectives will form core of program, and serve as an introduction to graduate study in education.

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

410. Instructional Design and Technology
Fall, Winter, Summer. 2 to 4 credits.
Students design plans for implementing instruction via systems approach and application of learning principles.

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

412. Human Growth and Development
Fall, Winter, Spring. 4(3-4) 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. 3(3-0)
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.

415. Student Leadership Training
Fall, Winter, Spring. 2(0-3) Approval of the Office of Student Affairs.
Prepares students for leadership roles and responsibilities by encouraging the development of skills and techniques consistent with the principles of our democratic society.

417. Introduction to Libraries and Materials Centers
Fall. 3(3-0) Juniors or approval of department.
Development of libraries, origin, services, operations, routines. Role and responsibility of the school library as related to the curriculum.
418. Selection of School Library Materials
Winter. 4(3-2) 417.

419. Basic Reference Sources and Services
Spring. 4(3-2) 417.
Identification, evaluation, selection, and use of basic reference sources including the card catalog, indexes, encyclopedias, dictionaries, handbooks, almanacs, etc.

420. Organization and Cataloging of Library Materials
Fall. 4(3-2) 418.
Procedures in the acquisition of school library materials; cataloging and classification, and related processes in the proper organization of school library materials.

421. School Library Administration
Winter. 4(3-2) 420.
Administrative problems pertaining to school libraries and materials centers. Budget planning and preparation, personnel, relation to the teaching faculty, physical facilities. School library standards. Coordination of library services and the school curriculum.

422. Field Assignment in School Libraries and Materials Centers
Spring. Eight credits. 410, 421.
School library experiences for the student. Supervised practice and observation in school library activities: book selection; circulation and reference assignments; audiovisual work; budget preparation; and exhibits.

423A. Educational Provisions for the Visually Handicapped
(430A.) Fall, Summer. 3(3-0) 424A, ASC 454.
Causes and effects of visual impairment: 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
(430A.) Fall, Summer. 4(3-2) 424A, 436C; or concurrently.
Comprehensive curriculum essentials; required teacher competencies; and special principles of instruction. Resources, materials and methods of teaching at the elementary school level. Concurrent laboratory experiences in classrooms with visually handicapped pupils.

423C. Braille
(430A.) Fall, Summer. 4(3-2) 424A, ASC 454.
A laboratory course designed to teach the skills of reading and writing standard English Braille using required tools.

423D. Low Vision and Its Facilitation
Winter. Summer of odd-numbered years. 3(3-0) FSL 523.
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
(430A.) Fall, Summer. 3(3-0) 424A.
Basic techniques for developing competencies in daily living skills including grooming, eating, orientation, and mobility. Readiness activities. Use of cane as mode of travel.

423F. Communication Modifications for Visually Handicapped Children
Spring. 3(2-2) 423C.
A laboratory course including Nemeth Code of Mathematics; science, music and language notation; preparation of classroom materials; establishing text reference materials. Emphasis upon instruction at the secondary level.

423G. Education of the Blind-Deaf
(430A.) Fall, Winter, Spring. 3(2-3) 424A.
May re-enroll for a maximum of 9 credits. ASC 222, 277, 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.

424A. Education of Exceptional Children
(421.) Fall, Winter, Spring. 3(3-0) 424A.
Screening and placement procedures. Terminology and interpretation of tests used for assessment of intelligence, aptitude, achievement, personality and interests of the handicapped.

424B. Psycho-Educational Evaluation of the Handicapped
(430C.) Fall, Winter, Spring. 3(3-0) 424A.
Identification and study of organizations important to the operation of special education programs including educational, state and voluntary agencies.

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

424D. Educational Provisions for Deaf Children and Youth
(430B.) Winter, Spring. 3(3-0) 424A, 436, ASC 454.
Adaptation of educational methods, materials and curriculum to the needs of individuals with severe and profound hearing loss.

425. Language Development for the Deaf
(430B.) Fall, Winter, Spring. 3(3-0) 424A, 436, ASC 322, 454.
Theories of language development, considerations of systems in both oral and total communication philosophies; practice in manual communication.

425A. Educational Provisions for Deaf Children and Youth
(430B.) Winter, Spring. 3(3-0) 424A, 436, ASC 454.
Adaptation of educational methods, materials and curriculum to the needs of individuals with severe and profound hearing loss.

425C. Speech Development for the Deaf
(430B.) Winter, Spring. 3(3-0) 425B or concurrently.
Techniques for aiding development of intelligible speech in individuals with severe and profound hearing loss.

425D. Manual Communication of the Deaf
Fall, Spring. 2(2-0)
Development of basic skills in finger spelling and the language of signs, with emphasis on signed English; practice in simultaneous use with spoken English.

427A. Educational Provisions for the Physically Handicapped
(430C.) Fall. 3(3-0) 424A, 436.
Facilities, programs, trends, methods, materials and terminology in education of the physically handicapped. Field trips to special classes and hospital school programs.

427B. Educational Provisions for Learning Disabilities
(430C.) Fall, Spring. Summer of odd-numbered years. 3(3-0) 424A.
Characteristics and terminology of basic learning theories and learning disabilities. Educational practices and programs and major contributors. Field practicum with learning disability children.

428A. Psycho-Educational Characteristics of the Mentally Retarded
(430D.) Fall, Summer. 3(3-0) 424A or approval of department.
Cognitive, affective and social characteristics of the mentally retarded. Implications for school learning and life adjustment. Differentiation of mental retardation from related conditions.

428B. Curriculum for the Mentally Retarded
(430D.) Fall, Summer. 3(3-0) 424A or approval of department.
The development of curriculum for mentally retarded children and youth emphasizing current practice in pre-school through secondary school programs for educable and trainable mentally retarded.

428C. Educational Procedures for the Mentally Retarded
(430D.) Fall, Summer. 3(3-0) 424A or approval of department.
Methods of instruction for mentally retarded children and youth emphasizing the development of objectives, assessment of individual abilities, the development of learning skills, and the teaching of non-academic and academic skills.

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

429. Disabling Conditions: Special Education and Rehabilitation
Fall. 3(3-0) 434A.
Etiology, medical, educational-vocational implications of disabilities for special education and rehabilitation. Emphasis on medical lectures by physicians.

429C. Laboratory Programs in Driver and Traffic Education
Winter, Spring, Summer. 3(3-4) 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.

A-51
429H. Organization and Administration of Driver and Traffic Education
Fall, Spring, Summer. 3(3-0) 499G
Organizational and administrative aspects of driver and traffic education as they relate to the total school, core, and other specialized programs. Historical and philosophical aspects, evaluation, related professional organizations, and occupational opportunities.

430K. Personality Factors in Driver and Traffic Education
Fall, Winter, Spring, Summer. 3(3-0) 429G
Study of behavior with emphasis on attitudes, motivation, and adjustment and their relationship to understanding human behavior. Investigation of principles and methods appropriate in identifying, understanding, and modifying unsatisfactory behavior.

429J. Personality Factors in Driver and Traffic Education
Fall, Winter, Spring, Summer. 3(3-0) 429G
Study of behavior with emphasis on attitudes, motivation, and adjustment and their relationship to understanding human behavior. Investigation of principles and methods appropriate in identifying, understanding, and modifying unsatisfactory behavior.

432A. Psycho-Educational Characteristics of the Emotionally Disturbed
(430E.) Fall, Winter, Spring, Summer. 3(3-0) 432A
Psycho-educational characteristics of the emotionally disturbed are surveyed and evaluated. Additionally, various strategies which purport to educate the disturbed child are studied and evaluated.

432B. Remedial Practices with the Emotionally Disturbed
(430E.) Fall, Winter, Spring, Summer. 3(3-0) 432B
Emphasis is on the specific learning disabilities of the emotionally disturbed, both in the area of assessment and remediation. Specific methods and materials are surveyed and described in terms of their use.

432C. Classroom Management: Emotionally Disturbed
(430E.) Fall, Winter, Spring, Summer. 3(3-0) 432C
For majors in the area of the emotionally disturbed only. Emphasis is on the psychological and emotional management of the emotionally disturbed in school settings.

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

436A. Student Teaching
(436.) Fall, Winter, Spring, 15(5-35)
May re-enroll for a maximum of 30 credits. 2.00 cumulative grade-point average; 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 the previous October; Winter—during the previous February; Summer—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.

436B. Student Teaching
(436.) Fall, Winter, Spring, 3(3-0)
2.00 cumulative grade-point average; 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 the previous October; Winter—during the previous February; Summer—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, 19(3-20) 436C
Application must be made to the Student Teaching Office as follows: Fall—during the previous October; Winter—during the previous February; Summer—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.

441E. Advanced Industrial Arts Crafts
Winter and Fall of odd-numbered years, Spring of even-numbered years. 3(0-6) 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) 436
Analysis of the student teaching experience. Professional expectations, role of the teacher, and scope of home economics programs.

446. Teaching Internship
Fall, Winter, Spring. 5 to 15 credits.
May re-enroll for a maximum of 22 credits. 321A.
Internship teaching experience under the guidance and supervision of interested 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) 450A
Successful completion of 436 or 446.
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) 464A
200.
History and status of educational measurement. The available standardized tests and sources of information about them. Interpretation of standard test scores. Norms and profiles. Local and wide-scale testing programs.

485. Testing and Grading
Fall, Winter, Spring, Summer. 3(3-0) 485A
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.

490. Science Instruction in Selected Areas for Elementary and Middle School Teachers
Winter, Spring, Fall. 3(3-0) 345A
May re-enroll for a maximum of 6 credits. 325.
Extends instructional techniques and knowledge of teaching materials in various science-related curricula for elementary and middle school children. Limited to examination of selected topics during any one term.

471B. Classroom Management in Business and Distributive Education
Fall, Spring. 4(3-2) 300, 327C concurrently or approval of department.
Principles and practices of using materials and media; using community resources; providing directed occupational experiences; how-to-individualize instruction; evaluating student achievement.
472. Organization and Administration of Cooperative Office and Distributive Occupations Programs
Fall, Winter, Spring. 3(3-0) 471B or concurrently; approval of department.
Development of knowledge and understanding of (1) purposes of preparatory in-school curriculum and its relationship to cooperative programs of office and distributive occupations; (2) organization and administration of a cooperative program; (3) coordination techniques; and (4) correlation of on-the-job and in-school learnings through related instruction classes.

473. Individualized Study in Industrial Education
Fall, Winter. 3 credits. May re-enroll for a maximum of 5 credits. Approval of department.
Development of professional and technical competencies in industrial education using laboratory, credit, school, government, and industrial settings.

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

1DC. Canadian-American Studies
For course description, see Interdisciplinary Courses.

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.

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

483. Readings and Independent Study in Education
Fall, Winter, Spring. 1 to 8 credits. Approval of department.
May re-enroll for a maximum of 8 credits. Juniors and seniors. 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 credits. May re-enroll 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. 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) 101A, 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. 2(0-6) 436; 425B, C or concurrently.
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 re-enroll for a maximum of 11 credits. 101A.
Supervised practicum in an educational program for emotionally impaired learners accompanied by a discussion period on application of educational strategies.

490C. Field Experience: Mental Retardation
Fall, Winter, Spring. 3(0-9) May re-enroll for a maximum of 9 credits. Approval of department.
Supervised practicum in an educational program for mentally retarded learners.

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

490E. Aiding Teachers of Blind/Deaf Learners
Fall, Winter, Spring. 1(0-3) May re-enroll for a maximum of 3 credits. Juniors and seniors in education of blind/deaf children.
Three separate experiences aiding teachers of pre-school, primary, intermediate and adolescent-young adult, multi-disabled blind/def children.

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

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

490H. Field Experience: Special Education Core
Fall, Winter, Spring. 4(0-16) 101A, 424A, admission to special education, core students only.
Supervised practicum in an educational program for handicapped learners, taken concurrently with Education 434B and 434C.

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

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 centered on problems of continuing concern. Particular attention devoted to the role of the teaching profession in issues involving public policy.

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

D. Social Criticism and Education
Fall, Summer. 3(3-0) 801A, approval of department.
Educational implications of critical analyses of contemporary society. Particular attention given to discrepancies between ideology and practice. Building school programs designed to cope with cultural inadequacies.

F. Comparative Educational Philosophies
Winter, Summer. 3(3-0) 801A.
Critical analysis and evaluation of the educational philosophies of Plato and Dewey and their implications for practice.}

802A. Education in the U.S.A.
Spring. 3(3-0) 801A.
Critical analysis and evaluation of leading modern philosophies of education and their implications for practice, such as: existentialism, idealism, permissivism, realism, reconstructionism.

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

803. Curriculum Innovation in Elementary and Middle School Science
Summer. 3(3-0) Experience in teaching, 252F or approval of department.
Inductive examination of the objectives, learning theory, instructional strategies, classroom activities, and science content of a single elementary science course selected from among current curriculum revision projects.
A. HISTORY OF AMERICAN EDUCATION
Fall, Winter, Spring, Summer. 3(3-0) Approval of department.
Development of educational thought and practice in the United States. Importance of cultural influences. A critical examination of progress toward educational goals. Implications of historical background for present problems.

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

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

D. DEVELOPMENT OF EDUCATIONAL THOUGHT AND PRACTICE IN THE MODERN WORLD
Spring, Summer. 3(3-0) Approval of department.
Deals historically with the development of modern education in the last three centuries. An intensive study of the works of leading figures in educational thought. Emphasis upon Rousseau's Emile. Works by Pestalozzi, Herbart, Froebel, James, and others examined.

E. EDUCATION IN THE WESTERN WORLD
Fall, Summer. 3(3-0) Approval of department.
Comparative study of educational systems and philosophies of Canada, England, France, Russia, and other Western countries. Visiting foreign educators. Field trip to Canada.

F. EDUCATION IN THE NON-WESTERN WORLD
Winter. 3(3-0) Approval of department.
Comparative study of educational systems and philosophies of Asian and African countries to gain insight into the American educational system. Visiting foreign educators.

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

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

812. Growth and Behavior
Fall, Spring, Summer. 3(3-0) 412 or approval of instructor.
Survey of research with special attention to applications to teaching and school programs.

813. Social and Emotional Behavior in the Classroom
Winter, Spring, Summer. 3(3-0) 812. Survey of research on school class as a social group; the development of attitudes and values.

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
Fall, Winter. 3 to 21 credits. May re-enroll for a maximum of 21 credits. 819F.
Supervised graduate internship in rehabilitation counseling.

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

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

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

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

B. COUNSELING AND GUIDANCE IN THE CLASSROOM
Fall, Winter, Spring, Summer. 3(3-0) 815B; or concurrently.
Examination of factors underlying counseling activities of teachers and administrators. Basic principles, methods, and techniques related to diagnosing, interviewing, consulting and referring counselors for special assistance are included.

C. PRACTICE IN GROUP COUNSELING TECHNIQUES
Winter, Summer. 3(3-0) 816B.
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) 816A and 816B.
Role-playing, video tapes, audio tapes and demonstrations are utilized in helping each student develop skills in counseling with children and counselors with parents. Techniques appropriate for various age levels and problems will be practiced.

817A. Introduction to Urban Counseling
Fall. 3(3-0) 819A and 819B concurrently.
Problems—health, socio-cultural, economic, educational, legal, vocational—as manifested by urban residents and their resolution through counseling. Emphasis on systems and personal change mechanisms.

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

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

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

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

819C. The Guidance Information Service
Winter. 3(3-0) 819A and 819B.
The use of occupational, educational and social information in counseling interviews and in guidance programs.
819D. The Counseling Process
Winter. 3(3-0) 819A and 819B.
The counseling process with emphasis given to
students learning a systematic approach to
counseling. Students practice interviewing skills in
a counseling laboratory.

819E. Counseling and Consulting
Strategies
Spring. 3(3-0) 810C and 819D.
Selected remedial and preventative counseling strategies will be studied. Methods and tech-
niques for assisting with individual and envi-
enmental change will be examined. Pro-
cedures for consulting with parents, teachers,
and agency personnel will be studied.

819F. Counseling Practicum I
Spring. 6(4-8) 810C and 819D.
Supervised counseling experienced in selected
schools and agencies followed by analysis and
critique of these experiences through group and
individual consultation with instructor.

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

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

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

819K. Research in Counseling
Summer. 3(3-0) 819G.
Emphasis on research methods useful to coun-
selors: measuring counseling outcomes, develop-
ning local test norms and expectancy tables, evalu-
ing 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 prac-
tices found in public schools.

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

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

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

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

822B. Adult Education: A General
Survey
Fall, Spring, Summer. 3(2-2) 
Approval of department.
Overview of extent, origins, forms, purposes,
content, methods and guiding theories of contin-
uing education and its significance for individuals, institutions, communities and na-
tions.

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 prob-
lems, 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.

822M. 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 educa-
tion. 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 educa-
tion programs, apprenticeship, and general edu-
cation work experience. Emphasizes organiza-
tion and administration, instructional procedures,
co-ordination techniques, club activities, and evalua-
tion of cooperative educational programs.

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

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

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

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

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

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

828A. Community College
Fall, Winter, Spring, Summer. 3(3-0) Approval of
department.
Objectives of adult education in agriculture,
organizing and promoting classes, course plan-
ing, instructional procedures, follow-up and
evaluation.

828B. Teaching Adult and Young
Farmer Classes in Agriculture
Fall, Summer. 3(3-0) Approval of
department.
Theories of adult learning and community de-
velopment, their implications for design and
management of continuing education, and alter-
native methods for integrating social and phys-
ical environments, materials, media and persons
el 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 train-
ing function. Various instructional methods
examined with emphasis on the conference
method of problem solving.

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

830A. Special Methods and Materials
of Teaching
Fall, Winter, Spring, Summer. 3(3-0) May re-enroll in specific subject matter areas
for a maximum of 15 credits. Graduate student in
education; experience in teaching; under-
graduate course in the area; approval of de-
partment.
Develops an understanding of the basic principles and
techniques of effective instruction in the various
subject-matter areas in the school cur-
rriculum. Students will be expected to investigate
research as it relates to the improvement of in-
struction in a special field of study.
830C. Problems in Elementary Reading Instruction  
Fall, Winter, Spring, Summer. 3(3-0)  
Graduate students; teaching experience; approval of department.  
For experienced teachers. Includes consideration of the basic aspects of ability to read, desirable reading attitudes, habits, and skills. Practices and materials used in reading programs are examined and appraised. Outstanding investigations dealing with problems in this area are studied and evaluated.

830D. Methods in Reading at the Secondary Level  
Fall, Winter, Spring, Summer. 3(3-0)  
Graduate students; teaching experience; approval of department.  
An analysis of the reading problems of high school and college students. Material and procedures for identifying the reading attainments and needs 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; 830C or 830D; approval of department.  
Causes and types of reading retardation are considered, and procedures for working with retarded readers are examined. Laboratory experiences in administering and interpreting standardized and informal tests are provided.

830F. Clinical Practice in Remedial Reading  
Fall, Winter, Spring, Summer. 3(3-0)  
Graduate students in education; 830C or 830D; 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.

831A. Educational Media in Instruction  
Fall, Winter, Spring, Summer. 3(3-0)  
Students may not receive credit in both 431 and 831A.  
Improvement of teaching through educational media. Learning principles; nature and application of films, filmstrips, slides, transparencies, flat pictures, developmental boards, models, tape recordings, radio and television, and equipment operations.

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

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

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

831E. Planetarium Instruction and Management  
Summer. 4(4-0) Approval of department.  
Planning and instruction using modern planetarium facilities.

832. Advanced Methods and Materials in Special Education  
B. Deaf Children and Youth  
Spring of odd-numbered years. 3(3-0)  
425A, student teaching or clinical experience with acoustically handicapped children or approval of department.  
A review of recent research, and a study of its implications for the education of deaf children. History, legislation, service agencies, social adjustments, educational and vocational programs will be investigated and discussed.

C. Learning Disabilities  
Winter. Summer of odd-numbered years. 3(3-0)  
427A, student teaching or clinical experience with handicapped or approval of department.  
Approaches to remediation of learning disabilities in the classroom, identification, evaluation, methods, materials, aids, and programs, are considered within major theoretical structures.

D. Mentally Handicapped Children and Youth  
Winter. 3(3-0) 428A, B, C  
An analysis of research, trends, and programs in the area of mental retardation. Emphasis upon the relationship these factors have to problems of curriculum, teaching methods, guidance of students, and general classroom management.

E. Emotionally Impaired  
Summer. 3(3-0) 425A, B, C  
Review and analysis of recent research findings, intervention strategies, and curriculum development applicable to emotionally impaired children and youth.

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

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

835. Teaching Elementary School Arithmetic  
Spring, Summer of even-numbered years. 3(3-0) Experience in teaching and approval of department.  
Advanced methods and materials used in teaching concepts of the whole, integer, rational and real number systems including systems of numeration.

836. Elementary Education: School Mathematics Instruction  
Winter, Summer. 3(3-0) Experience in teaching and enrolled in mathematics education.  
Review of the literature— theoretical and research— on instruction in school mathematics including planning, group instruction, individual instruction, evaluation and instructional materials.

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

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

839. Program Development in Distributive Education  
A. Principles and Organization  
Fall. 3(3-0)  
Goals, historical background, and trends; contributions to individual development and manpower needs; program organization for secondary, post-secondary, and adult levels; overview of curriculum and instructional strategies; program evaluation.

B. Curriculum Development  
Winter; Summer. 3(3-0) 839A or approval of department.  
Adapting content of marketing and related disciplines to develop occupational competencies; selection of learning experiences, materials and media; development of performance goals related to career objectives; scope and sequence patterns.

C. Instructional Strategies  
Spring, Summer. 3(3-0) 839A and 839B or approval of department.  
Selecting appropriate teaching strategies; use of the project method, laboratory simulations, on-the-job training, youth organizations, and other methods; evaluation of student achievement.

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

A. Typewriting and Office Procedures  
Summer. 3(3-0) Experience in teaching.

B. Shorthand and Transcription  
Summer. 3(3-0) Experience in teaching.

C. Data Processing  
Summer. 3(3-0) Experience in teaching.
841. Driver and Traffic Education

A. Innovations in Driver and Traffic Education
   Fall, Summer. 3(3-0)
   Explanation of the broad spectrum of innovations in driver and traffic education. Particular emphasis will be placed on their adoption and application for improving classroom and laboratory instruction.

B. The Highway Transportation System
   Fall, Summer. 3(3-0)
   Overview of the development, management and operation of the highway transportation system and its implications for the traffic safety educator.

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

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

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

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

842D. Seminar-Research in Business Education
   Summer. 2 to 8 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. 3(3-0) Twelve graduate credits in Business or Vocational Education or approval of department.
   Criteria of vocational office education planning/organizing a program; curriculum patterns including block-time and senior intensive; content scope and sequence; program evaluation; special attention to legislation and curriculum research.

B. Classroom Systems
   Winter, Summer. 3(3-0) Approval of department.
   The initiation of new classroom systems in office education, the scope and sequence of office education systems, their curriculum content and instructional objectives. Emphasis on follow up and evaluation design.

C. Seminar
   Spring, Summer. 2 or 3 credits. Advanced graduate standing or approval of department.
   Focus as needed on current issues and problems, curriculum development projects, contemporary research. Emphasis on individual investigations and writing.

844. Research in Elementary Social Studies Instruction
   Spring of even-numbered years. 3(3-0)
   Focus on role, function, and design of research studies on the improvement of social studies instruction in elementary and middle schools.

845. New Social Studies Curricula
   Spring of odd-numbered years. 3(3-0)
   Focuses on new and emerging elementary and middle school social studies curricula. Specific attention given to selection and analysis of curricular models, programs, and materials; adaptation to specific needs of schools.

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

847. Seminar in Elementary Science Education I
   Winter, Summer. 3(3-0) Experience in teaching; 325F or 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, Summer. 1 to 3 credits. May repeat for a maximum of 6 credits. 846 or 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. 3(3-0) 830A.
   To investigate and criticize trends, issues and research in language arts programming and instruction.

500. Teacher and the 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. Emphasis on the personal and social nature of school administration. Introduction to 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 emerging trends in such problems and issues as personnel, plant, finance, community school programs, and instructional improvement. Intended primarily for persons actively preparing for administrative positions in schools and other educational agencies.

A. Theory and Organization.
   Fall, Winter, Summer. 3(3-0) Approval of department.

B. Practice and Problems.
   Winter, Spring, Summer. 3(3-0) 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 851A, 851B, or approval of department.

B. Secondary School Administration.
   Fall, Winter, Spring, Summer. 3(3-0) Twelve graduate credits in Education including 851A, 851B, or approval of department.

C. Instructional Supervision.
   Fall, Summer. 3(3-0) Twelve graduate credits in Education including 851A, 851B, or approval of department.

D. Business Administration of Schools.
   Winter, Summer. 3(3-0) Twelve graduate credits in Education including 851A, 851B, or approval of department.

852E. Middle School Administration
   Winter, Summer. 3(3-0) Twelve graduate credits in Education including 851A, 851B, or approval of department.
   Organization and administrative aspects of middle schools. Emphasis on basic characteristics of 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 organized program areas. Persons will normally select the section allied to their major program area.

A. Audio-Visual Programs.
   Winter, Summer. 3(3-0) Twelve graduate credits in Education including 850 or approval of department.

B. Vocational Education Programs.
   Summer. 3(3-0) Twelve graduate credits in Education including 850 or approval of department.

C. Administration of Pupil Personnel and Guidance Programs.
   Spring, Summer. 3(3-0) 815B.

D. Administration of Special Education Programs.
   Winter, Summer. 3(3-0) Approval of department.
   Organization and administrative aspects of special education programming. Federal, state, intermediate, and local district level programs in special education are reviewed.
855. Research in Educational Administration
Fall, Winter, Spring, Summer. 3(3-0)
855A, 855B, 867.
The identification of an individual research problem and the application of principles and techniques of educational research in seeking a solution to the problem.

861. Elementary School Curriculum
Winter, Summer. 3(3-0)
Regular admission to graduate program and approval of department. Curriculum definition as related to purposes of the elementary school; foundations and rationale for curriculum study, revision, and improvement; procedures and organizational aspects of curriculum 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 on a regular program and approval of department. Advanced graduate students (those nearing completion of the M.A. program or on the doctoral program) are given an opportunity to explore current research activities.

863. Trends and Issues in Children's Literature
Winter and Summer of odd-numbered years. 3(3-0) 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) 830A.
Provides graduate students an opportunity to discuss and evaluate current research related to reading and to conduct an in-depth study in the field of critical reading.

865. Principles of Educational Measurement
Winter, Spring, Summer. 3(3-0) 464 or 465; 869.
Nature of measurement and types of scales. Units, scoring, reliability, validity. Use of test scores in decision making.

866. Appraisal of Individual Intelligence and Personality
A. INTEGRAL MEASUREMENT I
Winter, Summer. 3(3-0) 464 or 465 or PSY 415; approval of department.

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

C. PERSONALITY ASSESSMENT IN EDUCATION
Spring. 3(3-0) 464 or 465; 813 or PSY 427.
Study of general personality structure and methods in personality assessment related to education.

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 presentation of research designs in educational research 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)
Pretest and approval of instructor.
Application of descriptive statistical techniques to educational data. Introduction to estimation and tests of hypotheses. Interpretation of statistical reports.

871. The Secondary School: Role, Function and Structure
Fall, Winter, Spring, Summer. 3(3-0)
Examination of the roles, functions, 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. Emphasizes the roles, function of students in secondary education. Students study the relevance of school curriculums and staff competencies to meeting the needs of secondary students. Emphasis will be placed upon developing guidelines for needed change.

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

874. Student Development and College Personnel Programs II
Winter. 3(3-0) Majors in College Student Personnel; approval of department.
Emphasis upon the student as a member of a group; peer and group influence and behavior; student organizations and group activities; 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.

881. Workshops in Education
Fall, Winter, Spring, Summer. 1 to 6 credits. May re-enroll 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. Variable credit. 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 practica, observation, internships, and externships in the various areas of emphasis.

885. Seminar: Continuing Education Leadership in Local Communities
Spring. 3(2-2) May re-enroll for a maximum of 6 credits. Majors or approval of department.
Formal and non-formal community education for adults. Administration, agency cooperation, accountability, ethical and political concerns, managing controversy, and balancing objective study with advocacy in programs of personal and community development.

889A. Issues in Education of Deaf Students
Spring. 3(2-3) Graduate students.
Designed for graduate non-majors seeking to expand information and understanding of severe and profound hearing loss; educational implications, programs.

889B. 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.

889C. 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.

889D. Psychoeducational Diagnosis of the Handicapped
Fall, Spring. 3(3-0) Approval of department.
Emphasis upon principles of assessment and their utilization in the classroom. An interdisciplinary approach in assessment techniques delineating theory and application.
889E. Analysis of Special Education Research
Winter. 3(3-0)
Analysis of research studies in each special education disability area. Study of research design and procedures, discussion of theoretical and applied issues relating to the contents of the studies.

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

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

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

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

890B. Field Experience: Emotionally Impaired
Fall, Winter, Spring, Summer. 3 to 12 credits. May re-enroll for a maximum of 18 credits. M.A. candidates in special education—emotionally impaired, approval of department.
Supervised graduate field experience in educational programs for the emotionally impaired.

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

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

890E. Field Experience: Teaching Blind/Deaf Learners
Fall, Winter, Spring. 3 to 12 credits. May re-enroll for a maximum of 18 credits. Approval of department.
Supervised graduate field experience in educational programs for the blind/deaf.

890F. Field Experience: Learning Disabilities
Summer. 3 to 12 credits. May re-enroll for a maximum of 12 credits. 427B, 889D, 832C.
Supervised graduate field experience in educational programs for those with learning disabilities.

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

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

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

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

891E. Independent Study: Learning Disabilities
Spring. 3 to 12 credits. May re-enroll for a maximum of 12 credits. 427B, 889D, 832C.
Supervised study in learning disabilities conducted according to a written agreement stating the problem or topical area of study, the methodology and the product of the study.

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

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

901. Educational Sociology: Seminar
(S01D.) Fall, Winter. 3 or 4 credits. Approval of department. Interdepartmental and administered by the Department of Sociology.

904. Historical and Comparative Foundations of Education: Advanced Comparative and International Education
Spring. 3(3-0) 894D, 894F.
Objectives, content, methodology, research problems of comparative and international education analyzed. Social and cultural forces affecting educational planning and institutional building studied. Agencies involved in international education identified.

911. Educational Psychology Seminar
Fall, Winter. Spring. 3(3-0) May re-enroll for a maximum of 15 credits. Doctoral candidates in educational psychology. First enrollment must be in fall.
Review of major areas and critical analysis of research problems and professional issues.

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

921. Curriculum Research Seminar
Spring. 3(3-0) 897, 911A.
Identification of researchable variables in the curriculum of an educational institution or program. Design of descriptive, evaluative and experimental studies within ongoing complex social systems.

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

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

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

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

933. Elementary Education: School Mathematics Learning
Spring. 3(3-0) Experience in teaching and enrolled in mathematics education.
Extensive review of the research of Bruner, Piaget, Gage, etc., on how students learn in general and how they learn mathematics in particular.
934. Elementary Education: School Mathematics Curriculum
Fall. 3(3-0) Experience in teaching and enrolled in mathematics education.
Emphasizes the place of mathematics in the curriculum, the strands of mathematics that should be included—the ordering of topics of each strand and emphasis of the respective strands.

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

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

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

951. Community Relations
Winter, Spring, Summer. 3(3-0) Approval of department.
Communication 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.

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

954. Planning Facility Learning Environments
Winter, 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.

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

965A. Psychometric Theory
Spring. 3(3-0) 865, 968B.
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
Fall, Winter. 3(3-0) 865, approval of department.
Advanced consideration of the logical and philosophical bases of educational measurement. Theory of test planning and development and evaluation. Problems of test administration and scoring. Issues in test use.

965C. Evaluation of Higher Education
Spring. 3(3-0) 828E.
Ways in which evaluation takes place in higher education: course evaluations, grading, comprehensive examinations, teacher evaluation, institutional evaluation, state surveys, and regional and national studies of higher education problems.

967. Advanced Research Methods in Education
Fall, Spring. 4(3-1) 867 and 869, or 968B.
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
Fall, Winter, Summer. 4(3-1) 869 or 871 with 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.

C. Experimental Design in Education.
Winter, Spring, Summer. 4(3-1) 969B.
Theory and practice in the design, analysis, and interpretation of experimental and quasi-experimental research.

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

973. College Student Personnel Administration I
Fall. 3(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.

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. 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. 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 experiential with limited contacts with clients.

986A. Counseling Practicum I  
Fall. 3(0-3) 985 or approval of department.

Supervised experience working with college students in a counseling relationship. Group discussion, group supervision and observation of counseling interviews, and individual supervision.

986B. Counseling Practicum II  
Winter. 3(0-3) 986A.

Supervised experience working with college students in a counseling relationship. Group discussions, group supervision and observation of counseling interviews, and individual supervision.

986C. Counseling Practicum III  
Spring. 2(0-3) 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 re-enroll for a maximum of 6 credits. Major or approval of department.

Continuing education, as social force impacting and impacted by government and corporate policy. Examination of domestic and foreign examples of interaction between social policy and continuing education.

987B. Seminar: Continuing Education in Higher Education Institutions  
Winter. 3(0-3) May re-enroll for a maximum of 6 credits. Major or approval of department.

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

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

990A. Field Experience: Special Education Administration Simulation  
Spring. 3(0-9) Approval of department.

Supervised graduate practicum in administration of the Special Education program of a simulated school district.

990B. Field Experience: Special Education Administration  
Fall, Winter, Spring, Summer. 3 to 12 credits. May re-enroll for a maximum of 18 credits. Approval of department.

Supervised graduate practicum or internship in special education administration.

990C. Field Experience: Special Education  
Spring. 3 to 12 credits. May re-enroll for a maximum of 18 credits. Approval of department.

Supervised graduate practicum in special education teacher training.

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

ELECTRICAL ENGINEERING AND SYSTEMS SCIENCE

College of Engineering

Electrical Engineering EE

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

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


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


305. Basic Electronic Circuits  
Spring, Summer. 4(4-0) 301, MTH 215.

Volt-ampere characteristics of diodes and transistors, Voltage, current and power amplification. Stability, transient and high-frequency effects. Feedback, oscillators and operational amplifiers.

306. Electromagnetic Fields and Waves II  
Winter. Spring. 3(3-0) 305.

Magnetostatic fields; EM sources, vector potential, magnetic media, inductance, and energy storage. Time-varying fields and Maxwell's equations; energy conservation, potential theory, and radiation concepts.

307. Electromagnetic Fields and Waves III  
Spring, Summer. 3(0-3) 306; 308 concurrently.

Application of Maxwell's equations; radiation, propagation, reflection, and power flow of plane EM waves; EM boundary value problems. Transmission line theory; transient and steady-state waves, standing and traveling waves, reflections and standing-wave ratio.

345. Introduction to Electronic Instrumentation Systems  
Fall, Winter, Spring. 4(3-3) PHY 288.

Basic electronic concepts; passive and active components; operational amplifiers; switching devices, equivalent circuits, transducers, signal conditioning; recording; data management; basic elements of control.

415. Control Systems  
Winter. 3(3-0) SYS 313.

Formulation of automatic control problems; review of modeling methods; specifications, controllability and stability; controller design via root locus and state-vector methods; survey of digital control.

418. Introduction to Network Synthesis  
Spring. 3(3-0)


419. Physical Phenomena and Electronic Instrumentation I  
Winter. 4(3-3) PHY 289 or 292B; MTH 215. Interdepartmental with and administered by the Physics Department.

Concepts of electronics relative to uses in investigations of physical phenomena and their subsequent applications to provide reliable instrumentation. Nuclear radiation detectors, photometers and magnetometers are examples of specific topics covered.

430. Digital Electronics I  
Fall. 3(3-0) 302.

Characteristics and applications of digital integrated circuits. Number systems and Boolean algebra. Gates, flip-flops, clocks, counters, shift registers, A/D and D/A converters. Basic applications of these devices.

431. Digital Electronics II  
Winter. 3(3-0) 430 or GPS 421.

Basics of microcomputer and microcomputer based systems. Programming fundamentals. The I/O bus, interfacing, data acquisition, data storage, and data communication. Practical design problems.