801. Independent Study
Fall, Winter, Spring, Summer. 1 to 4 credits. May reenroll for a maximum of 8 credits. Approval of department.

805. Clustering and Scaling Algorithms
Fall. 3(3-0) CPS 301 or CPS 304, STT 441 or approval of department.

806. Fundamentals of Pattern Recognition
Spring. 4(4-0) CPS 301 or CPS 304, MTH 334, STT 442.

809. Computer Arithmetic Algorithm Design
Fall. 4(4-0) E E 431 or CPS 432. Interdepartmental with and administered by Electrical Engineering.

812. Computer Networks
Spring. 3(3-0) CPS 412. Interdepartmental with Electrical Engineering.

813. Logic Design Methodologies
Spring. 3(3-0) CPS 423 or E E 431. Interdepartmental with and administered by Electrical Engineering.

815. Architecture of Computational Systems
Winter. 3(3-0) CPS 423. Interdepartmental with Electrical Engineering.

818. Introduction to Robotics
Spring. 3(3-0) E E 415 or M E 459 or approval of department. Interdepartmental with and administered by Electrical Engineering.

822. Computer Vision
Winter. 4(4-0) MTH 334, CPS 252, STT 441.

831. Theory of Formal Languages I
Fall. 3(3-0) CPS 322 or approval of department.

832. Theory of Formal Languages II
Winter. 3(3-0) CPS 821.

835. Analysis of Graph Algorithms
Fall. 3(3-0) MTH 334, CPS 222.

841. Artificial Intelligence I
Winter. 4(4-0) CPS 252, STT 441.

842. Artificial Intelligence II
Spring. 3(3-0) CPS 212, CPS 841.

876. Performance Measurement Techniques
Fall. 3(3-0) CPS 313, CPS 322, STT 441.

882. Operating Systems Theory II
Spring. 3(3-0) CPS 881.

885. Large Data Base Theory
Summer. 3(3-0) CPS 312, CPS 452, or approval of department.

890. Special Topics
Fall, Winter, Spring, Summer. 2 to 4 credits. May reenroll for a maximum of 10 credits. Approval of department.

899. Master's Thesis Research
Fall, Winter, Spring, Summer. Variable credit. Approval of department.

906. Advances in Pattern Recognition
Fall. 3(3-0) CPS 805, CPS 806, CPS 822.

911. General Automata Theory I
Fall of odd-numbered years. 3(3-0) CPS 823 or SYS 827 or approval of department.

921. Advanced Computer Systems I
Fall. 3(3-0) Two graduate level courses in computer system design (hardware or software). Interdepartmental with Electrical Engineering.

999. Doctoral Dissertation Research
Fall, Winter, Spring, Summer. Variable credit. Approval of department.
Counseling, Educational Psychology and Special Education — Description of Courses

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

412. Human Growth and Development
Fall, Winter, Spring. 4(2-4)
T E 200 or T E 200A or T E 200B or T E 200C.
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. 3(3-0) T E 200 or T E 200A or T E 200B or T E 200C.
Social and emotional adjustments of children. Emphasis on balancing factors facilitating prevention and resolution of behavior difficulties and evaluation of school programs on basis of their contribution to mental health.

415B. Curriculum for the Mentally Impaired
Winter. 3(3-0) CEP 460 or approval of department.
Development of curriculum for mentally impaired children and youth emphasizing current practice in pre-school through secondary school programs for the moderately and mildly mentally impaired.

428C. Educational Procedures for the Mentally Impaired
Winter. 3(3-0) CEP 460 or approval of department.
Methods of instruction for mentally impaired children and youth including the assessment of individual abilities, the development of instructional objectives, and the teaching of nonacademic and academic skills.

428D. Education of the Severely Impaired
Fall, Spring. 3(3-0) CEP 460 or approval of department.
Procedures in teaching severely impaired children and youth.

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

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

434. Computers in the Classroom
Fall, Winter, Spring. 3(3-0) Juniors.
How to teach computer literacy and programming in public schools. Computer aided instruction in the classroom. Applying instructional design principles to the selection, evaluation, modification, and development of computer courseware.

446A. Teaching Science with Microcomputers
Winter, Summer. 3(3-0) CEP 434. Interdepartmental with and administered by the Department of Teacher Education.
Survey and critique of software available for science instruction; students adapt generic and create original microcomputer routines and/or teaching strategies for use in science teaching.

446B. Teaching Social Studies with Microcomputers
Winter, Summer. 3(3-0) CEP 434. Interdepartmental with and administered by the Department of Teacher Education.
Survey and critique of software available for social studies instruction; students adapt generic and create original microcomputer routines for use in social studies teaching.

460. Education of Exceptional Children
Fall, Winter. 5(5-0) T E 200.
Characteristics and educational needs of students with handicapping conditions and exceptionalities. Special education programs and supportive community services.

460B. Educational Provisions for the Physically Handicapped
Fall. 3(3-0) CEP 460, T E 470.
Facilities, programs, trends, methods, materials and terminology in education of the physically handicapped. Field trips to special classes and hospital school programs.

460C. Psychoeducational Characteristics of the Mildly Impaired
Winter. 3(3-0) CEP 460.
Cognitive, affective, and social characteristics of the mildly impaired; instruction activities that affect school learning and personal adjustment.

460D. Classroom and Behavior Management in Special Education
Spring. 3(3-0) CEP 460.
Behavior management procedures for handicapped students in school settings. Specific methods for assessment, teaching, maintenance, and generalization of academic and nonacademic behaviors.

461. Academic Assessment of Mildly Impaired
Fall, Spring. 3(3-0) CEP 460, T E 310, T E 315. Taken concurrently with CEP 460K, CEP 460L, CEP 460C.
Screening and placement procedures; terminology and interpretation of tests used for assessment of intelligence, aptitude, achievement, personality, and interests of the mildly impaired.

461J. Academic Instruction of Mildly Impaired
Fall, Spring. 3(3-0) CEP 460K, T E 310, T E 315. Taken concurrently with CEP 460K, CEP 460L, CEP 460C.
Education practices and remedial strategies for teaching academic skills to mildly impaired students.

466B. Remedial Practices: Emotionally Impaired
Winter. 3(3-0) CEP 460.
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.

460L. Core Seminar in Special Education
Fall, Spring. 2(2-0) CEP 460, T E 310, T E 312, T E 315. Taken concurrently with CEP 460K, CEP 460L, CEP 460C.
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.

463A. The Exceptional Child in the Regular Classroom
Spring. 2(2-0) T E 201B.
Exceptional learners characteristics, and instructional strategies/curricular adaptations appropriate to such learners. Legislation mandating educational programs and affecting school practices will be reviewed.

465A. Educational Provisions for Deaf Children and Youth
Winter. 3(3-0) CEP 460, T E 470, ASC 454.
Adaptation of educational methods, materials and curriculum to the needs of individuals with severe and profound hearing impairment.

465B. Language Development for the Deaf
Fall. 3(3-0) CEP 460, T E 470, ASC 454.
Theories of language development; considerations of systems in both oral and total communication philosophies; practice in manual communication.

465C. Speech Development for the Deaf
Fall. 3(3-0) CEP 465B or concurrently.
Techniques for aiding development of intelligible speech in individuals with severe and profound hearing loss.

465D. Manual Communication I
Fall, Winter, Spring. Summer of odd numbered years. 3(3-2) Approval of department.
Development of basic skills in finger spelling and the language of signs, with emphasis on signed English; practice in simultaneous use with spoken English.

465E. Manual Communication II
Fall, Winter. 2 to 4 credits. May reenroll for a maximum of 8 credits. CEP 465D.
Continued development of skills in total communication for use in educational service delivery systems. Practice in simultaneous use of speech, finger spelling and the language of signs at an intermediate level.

465K. Field Experience: Deaf Education
Fall, Winter. 2(0-6) T E 470, CEP 465B, CEP 465C or concurrently.
Observation/participation in day classes for hearing impaired learners at elementary, secondary or post-secondary levels. Minimum 60 clock hours.

466B. Remedial Practices: Emotionally Impaired
Winter. 3(3-0) CEP 460.
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.
Supervised practicum in an educational pro-
Description - Counseling, Educational Psychology and Special Education
470. Teaching Low
Behavior Management: Emotionally Impaired
Fall, Winter. 3(3-0) CEP 490.
For student teachers in the area of the emotion-
ally disturbed only. The primary emphasis is on
psycho-educational curriculum, and manage-
ment of the emotionally disturbed in school set-
tings.
466K. Field Experience: Emotionally Impaired
Winter. 3(0-9) CEP 466B and CEP
466C concurrently.
Practicum in elementary and secondary school
programs for mentally retarded learners.
467K. Field Experience: Mentally Impaired
Fall, Winter, Spring. 3(0-9) May reenroll for a maximum of 9 credits. Approval of
department.
Supervised practicum in an educational pro-
gram for mentally retarded learners.
470J. Teaching Low Vision Skills to Visually Impaired Learners
Fall, Winter, Spring. 1(0-3) CEP 473 or CEP 870K or CEP 871 concurrently.
Utilizing specialized curricula, instructional
strategies, materials and aids to assess and facili-
tate learning for low vision students in classroom
settings.
470K. Aiding Teachers of Visually Handicapped Learners
Winter, Spring. 1(0-3) May reenroll for a maximum of 4 credits. Juniors in education of
visually handicapped or blind/deaf children.
Three separate experiences aiding teachers of
preschool, primary, intermediate and adoles-
cent-young adult, multi-impaired visually
handicapped learners in public and residential
school programs.
470L. Teaching Daily Living Skills to Visually Handicapped Learners
Fall, Winter, Spring. 1(0-3) CEP 473 or CEP 870K or CEP 871 concurrently.
Supervised practice with visually handicapped and blind/deaf learners to develop competencies in
teaching orientation and mobility, and the other skills of daily living.
471A. Education of Multiply Handicapped Visually Impaired and Blind/Deaf Students
Fall, Winter, Spring. 3(2-2) May reenroll for a maximum of 9 credits. ASC 222, ASC 274 or concurrently.
Methods of teaching severely multiply handi-
capped visually impaired and blind/deaf learn-
ers: readiness, sensory development, curriculum
assessment, behavior management and modifi-
cation, communication and language, including
language methods and principles.
471B. Teaching Optacon Reading to Blind School-Age Learners
Winter. 1(0-2) Junior Special Educa-
tion majors.
A laboratory course emphasizing curriculum, teaching methods and materials designed to
enable blind school-age learners to read print using the Optacon.
471K. Aiding Teachers of Blind/Deaf Learners
Three separate experiences aiding teachers of
blind/deaf learners in teaching low-functioning,
preacademic and primary level children.
472A. Braille
(CEP 470C.) Winter. 4(2-4) CEP 490 or concurrently.
Reading and writing standard English Braille
including music, foreign language and scientific
notations. Use of braille, slate and stylus.
472B. Teaching Communication Skills to Blind Learners
Fall. 4(3-2) CEP 472A; CEP 470K concurrently.
Curriculum, goals, behavioral objectives, meth-
ods, assessment and special media in teaching
preprimary sensory development; braille and
oral reading; and braille, signature and type-
writing. Adaptations for multi-handicapped blind
students.
472C. Teaching Mathematics to Visually Impaired Learners
(CEP 479A.) Fall. 3(2-2) CEP 472A.
Development of basic skills in teaching mathe-
matical readiness concepts and computations to
visually handicapped learners. Use of Nemeth
Braille Code and abacus.
472D. Education of Mainstreamed Visually Impaired Learners spring. 4(3-2) CEP 460 or concurrently;
CEP 470K concurrently.
Specialized service delivery to visually impaired and blind students in mainstream classes;
teacher consultation, providing learning materi-
als in adapted formats, teaching independent
living skills, and planning for transition to work.
472E. Provisions for the Visually Impaired and Blind Learners
(CEP 470A.) Spring. 3(2-2) CEP 460 or concurrently; CEP 484 or concurrently; CEP 470K concurrently.
History, legislation, statistics, trends in educa-
tion of visually impaired. Methods and materials
for assessment and utilization of low vision. Tac-
tual, auditory and visual access to computers.
Implications of technological advances.
472F. Principles of Orientation and Mobility
Fall. 3(3-0) CEP 460 or concurrently.
Adaptive travel techniques, navigation, envi-
ronmental awareness and concept development
for handicapped and visually impaired students.
472G. Techniques of Orientation and Mobility
Fall, Winter. 3(1-4) CEP 472C or concurrently; majors in special education with an emphasis in visually impaired.
Methods of general navigation and environmental
awareness relating to blindness. Travel tech-
niques taught under blindfold conditions.
472H. Advanced Techniques of Orientation and Mobility
Winter, Spring. 4(1-6) CEP 472I.
Advanced navigation and environmental aware-
ness relating to blindness and application of
learning methods; techniques taught under
blindfold conditions in complex environmental
settings.
472J. Practicum in Orientation and Mobility
Spring, Summer. 3 to 15 credits. May reenroll for a maximum of 15 credits. CEP
472G; CEP 472I; CEP 472J; approval of depart-
ment.
Supervised field experience in teaching indepen-
dent travel to visually impaired students.
473. Parent-Teacher Relationships in Special Education
Fall. 3(3-0) CEP 460 or approval of depart-
ment.
Development of skills for parent-teacher confer-
ences and consultant-teacher relationships. Strate-
gies for managing home-school relationships
particularly in the area of mental impairment.
482. Seminars in Counseling, Educational Psychology and Special Education (MTS)
Fall, Winter, Spring, Summer. 1 to 6 credits. May reenroll for a maximum of 6 credits if different topics are taken. Approval of depart-
ment.
Seminars in the various fields of emphasis in
counseling, educational psychology and special education.
800. Principles of Educational Measurement
Winter, Summer. 3(3-0) CEP 401 or CEP 400; CEP 504.
Nature of measurement and types of scales.
Units, scores, norms, sampling, item analysis, batteries and profiles. Principles of reliability and validity. Use of test scores in decision mak-
ing.
801. Seminar in Test Development
Spring. 3(3-0) CEP 400.
Techniques in preparing and developing achievement test items and tests.
802A. Appraisal of Individual Intelligence and Personality: Individual Measurement—Binet
Winter. 3(3-0) CEP 401 or CEP 400 or PSY 415; approval of instructor.
Fundamentals of individual intelligence mea-
surement. Measurement of intelligence with the
Stanford-Binet. Observation, practice, and
interpretation in an educational setting.
802B. Appraisal of Individual Intelligence and Personality: Individual Measurement—Wechsler
Fall, Summer. 3(3-0) CEP 401 or CEP 400 or PSY 415; approval of instructor.
Measurement of intelligence with the Wechsler
tests. Observation, practice, supervision, and
interpretation.
802C. Appraisal of Individual Intelligence and Personality: Personality Assessment in Education
Spring. 3(3-0) CEP 400 or CEP 401, CEP 513 or PSY 427A.
Study of general personality structure and meth-
ods in personality assessment related to educa-
tion.
803. Educational Research Methods
Fall, Winter, Spring. 3(3-0)
Rationales for and methods of research in educa-
tion. Emphasis is given to the identification of researchable problems and the interpretation of
research studies in the student's major field.
804. Appraising Educational Research
Winter. Summer. 3(4-0) Approval of instructor.
Appraisal of educational research from a data
analytical point of view. Issues of statistical
tests, experimental design and criticality and
A-50
808. Education Program Evaluation
Fall, Spring. 3(3-0) CEP 808.
History and current status of program evaluation, including a review of various evaluation models, common problems of implementation and alternative evaluation designs.

809. Case Studies in Program Evaluation
Winter. 3(3-0) CEP 809. Interdepartmental with the Department of Teacher Education.
Analysis of previously conducted program evaluations in terms of decisions evaluators must make about evaluation models, purposes, design, conduct, and reporting.

810. Evaluating School Effectiveness
Winter. 3(3-0) CEP 806 or approval of instructor. Interdepartmental with the Department of Educational Administration.
Approaches to evaluating school effectiveness. Recent research on school effectiveness. Alternative strategies for examining measured student achievement and school characteristics.

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

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

812B. Psychology of Adolescence in Schools
Winter. Spring. 3(3-0)
Adolescent growth and development with emphasis on physical maturation, intellectual growth, and self-concept development. Impact of family and peer relations, social-emotional adjustment, problems teachers face with adolescents.

812C. Psychology of the Gifted Student
Spring. 3(3-0) CEP 612A or CEP 612B.
This course will focus on the psychoeducational characteristics of gifted and talented students, the efficacy of administrative provisions, the development of creativity, and special talents.

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

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

818A. Introduction to Education of Gifted Students
Fall, Summer. 3(3-0) Graduate students.
History and theory of educating gifted students. Current developments in the field, promising programs and practices.

818B. Roles and Functions of School Psychologists
Spring. 3(3-0) Admission to Ed. S. program or approval of instructor.
History and current status of the field. Current concerns in assessment, reporting of findings, consultation and legal-ethical responsibilities.

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

818D. School Psychological Consultation
Spring. 3(3-0) CEP 818A, CEP 818B.
Description and evaluation of the major approaches to psychoeducational consultation as practiced by school psychologists.

820E. Diagnostics of Reading Difficulties
Fall, Winter, Spring, Summer. 3(2-2) Graduate students in education; T E 820A or T E 820C or 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.

820G. Clinical Practice in Remedial Reading
Fall, Winter, Spring, Summer. 3(3-0) Graduate students in education; T E 820A or T E 820C or approval of department; CEP 820E recommended.
Students work with individual cases, observe and practice group procedures in the University reading clinic.

820M. Seminar in Diagnostic and Remedial Reading
Fall, Winter, Spring, Summer. 3(3-0) CEP 820G.
Focuses on the psychological and physiological nature of reading retardation, the relationships between clinical reading programs and the larger curriculum environment, and the role of the reading diagnostician.

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

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

825. School Application of Portable ITV
Fall. 3(3-0) CEP 410, CEP 431A, CEP 431B or approval of instructor.
Application of concepts, principles, and skills relevant to portable ITV systems and television teaching techniques.

830. Administration of Instructional Media Centers
Winter. 3(3-0) CEP 831A.
Administration models used by media centers; comparison of theoretical and operational characteristics of recommended models and development of models for the students' use.

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

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

831C. Photography in Instruction
Fall, Spring. 3(3-0) CEP 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 Cinematography
Fall. 3(3-0) Approval of instructor.
Potentials and limitations of motion pictures for instructional and informational programs. Writing and budgeting film proposals, scripting, filming techniques, sound, animation, composition, film editing. Super 8mm format used.

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

833. Information Handling Systems
Spring. 3(3-0) CEP 830 or approval of instructor.
Design, implementation and study of information handling systems for print and non-print resources.

834. Computer Applications in Education I
Fall, Winter, Summer. 3(3-0) CPS 115, CEP 834, or approval of instructor.
Fundamentals of computer applications in education, with hands on experience. History of computer education, computer functioning related to educational problems. Hardware and software available for educational application.

834A. Computer Applications in Education II
Winter. Spring. 3(3-0) CEP 834.
Computer applications in instruction (CAI), administration and research. Direct experience with a broad spectrum of computer software widely used in educational applications.

834B. LOGO for Teachers
Fall. Summer. 3(3-0) CEP 434.
Lesson planning and guided discovery teaching techniques in LOGO.
834C. Teaching Problem Solving Skills with Microcomputers
Winter. 3(3-0) CEP 434.
Using computers to develop problem solving skills through appropriate data bases, spreadsheet, and programming strategies.

835. Instruction in College Teaching
Winter. 3(3-0) Graduate student, approval of instructor.
Instructional psychology and system design principles applied to college teaching. Selecting lecture, discussion and other teaching modes. Techniques for planning, delivering and evaluating college teaching.

836. Computer Assisted Instruction
Fall, Spring. 3(3-0) CEP 434.
Teaching applications of computer in instruction including evaluation of commercial courseware, instruction in use of author languages (PILOT, AUTHORI, Talk/Tutor), and the process of development of CAI packages.

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

838A. Instructional Design and Technology I
Winter, Summer. 3(3-0) Approval of instructor.
Basic skills and principles of instructional unit design: objectives, task description and analysis, and evaluation of instruction.

838B. Instructional Design and Technology II
Spring, Summer. 3(3-0) CEP 838A or approval of instructor.
Basic skills and principles of instructional lesson design, including motivation, mental set, explanation, demonstration, practice and feedback.

840A. Counseling Practice
Fall, Summer. 3(3-0) Admission to M.A. Counseling Program. Interdepartmental with the School of Health Education, Counseling Psychology and Human Performance.
The practice of counseling and guidance in schools, community colleges, and rehabilitation agencies.

840B. Introduction to Counseling Theory
Fall, Summer. 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.

840C. The Guidance Information Service
Winter. 3(3-0) CEP 840A, CEP 840B. Interdepartmental with the School of Health Education, Counseling Psychology and Human Performance.
The use of occupational, educational and social information in counseling interviews and in guidance programs.

840D. The Counseling Process
Fall, Winter. 3(3-0) CEP 840A, CEP 840B.
The counseling process with emphasis given to students learning a systematic approach to counseling. Students practice interviewing skills in a counseling laboratory.

840E. Counseling and Consulting Strategies
Fall, Winter. 3(3-0) CEP 840A, CEP 840B.
Selected remedial and preventative counseling strategies will be studied. Methods and techniques for assisting with individual and environmental change will be examined. Procedures for consulting with parents, teachers, and agency personnel will be studied.

840F. Counseling Practicum I
Fall, Winter, Spring. 6(4-8) CEP 840C, CEP 840D.
Interdepartmental with the School of Health Education, Counseling Psychology and Human Performance.
Supervised counseling experienced in selected schools and agencies followed by analysis and critique of these experiences through group and individual consultation with instructor.

840G. Counseling Practicum II
Fall, Winter, Spring. 6(4-8) CEP 840F.
Continuation of CEP 840F.

840H. Group Procedures in Counseling
Spring of odd-numbered years. Summer. 3(3-0) CEP 840G.
An examination of theories of group counseling with special emphasis on goal-directed groups. Tapes of group counseling will be analyzed and practice in leading groups under simulated conditions will be provided.

840K. Research in Counseling
Fall. 3(3-0) CEP 904.
Emphasis on research methods useful to counselors; measuring counseling outcomes, developing local test norms and expectancy tables, evaluating guidance services, studying behavior change in the single case.

840M. Development and Administration of Counseling Services
Fall, Spring, Students in rehabilitation counseling should enroll Fall Term. 3(3-0) CEP 840M.
Identification and study of policy issues in counseling, service development strategies, administrative issues, management and supervisory practices. Students will write a program proposal or issue analysis.

842F. International Aspects of Rehabilitation and Special Education
Spring of odd-numbered years. 3 credits. May reenroll for a maximum of 6 credits. CEP 842F.
International dimensions of rehabilitation and special education including developmental perspectives, current status and issues in the field.

842S. Introduction to Rehabilitation and Special Education in the United States
Winter. 3(3-0) Approval of instructor.
Overview of rehabilitation and special education programs in the United States. Emphasis will be given to historical development, current status, and future directions of services for handicapped persons.

844A. Introduction to Urban Counseling
Fall. 3(3-0) CEP 840A, CEP 840B concurrently.
Problems—health, sociocultural, economic, educational, legal, personal—as manifested by urban residents and their resolution through counseling. Emphasis on systems and personal change mechanisms.

844B. Systemic Counseling
Fall, Winter, Spring. 3 credits. May reenroll for a maximum of 12 credits. CEP 844A or approval of instructor.
An evaluation of the theory and philosophy of systemic counseling. Issues pertaining to systemic change will be examined.

844C. Urban Counseling Practicum
Fall, Winter, Spring, Summer. 3 credits. May reenroll for a maximum of 12 credits. CEP 844A 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.

844D. Urban Career Development System Analysis
Winter. 3(3-0) CEP 844A, approval of department.
Critique of existing theories of vocational (career) development and interest inventories for use with urban residents, examination of barriers to urban residents, and development of alternative models.

844E. Urban Counseling in the Elementary School
Summer. 3(3-0) Approval of department.
Seminar of issues and impact of the urban environment on the elementary child's personal and social responsibilities with implications for the role of the counselor.

844F. Sexism, Racism and Alienation in the Therapeutic Process
Winter. 3(3-0)
Historical perspective, definition, manifestations and consequences of sexism, racism and alienation in promoting social inequality. Emphasis upon creating counseling interventions to address needs of alienated groups.

844G. Community Evaluative Research
Spring. 3(3-0) CEP 844A, CEP 863, CEP 904 or approval of department.
Application of evaluative research methods to the solution of urban problems; review of current evaluative techniques; identification of problems, design, experiments; review of selected studies.

851A. Development of Self-Understanding
Fall, Spring, Summer. 3(3-0)
Development of self-awareness and understanding of how one's personal and interpersonal style influences and is influenced by human relationships in educational settings.

851B. Self-Concept Development and Enhancement
Fall, Spring, Summer. 3(3-0)
Self-concept development from childhood through adulthood; how teachers, parents, and personal life experiences impact self-concept; enhancement strategies.

863A. The Handicapped Student in the Regular Classroom
Summer. 3(3-0) Teacher certification.
Problems and issues involved in educating children in the least restrictive environment (mainstream). Emphasis on legal, attitudinal, and practical factors which influence teachers and students.

865A. Issues in Education of Deaf
Spring. 3(3-3) Graduate students.
Designed for graduate non-majors seeking to expand information and understanding of severe and profound hearing loss; educational implications, programs.
865K. Field Experience: Education of Deaf
Spring. 2 to 5 credits. May reenroll for a maximum of 10 credits. Graduate students. Prior teaching or clinical experience. Supervised graduate field experience in educational programs for the deaf and hearing impaired.

865M. Independent Study: Education of Deaf
Spring. 2 to 5 credits. May reenroll for a maximum of 10 credits. Graduate students. Supervised study in deaf education conducted according to a written agreement stating the problem or topical area of study, the methodology and the product of the study.

866A. Issues in Education of Emotionally Impaired
Summer. 3(3-0) Special Education majors only, approval of instructor.
This seminar focuses on crucial issues related to programming for emotionally impaired students.

866J. Advanced Methods and Materials in Special Education: Emotionally Impaired
Fall. 3(3-0) CEP 466A, CEP 466B, CEP 460C.
Review and analysis of recent research findings, intervention strategies, and curriculum developments applicable to emotionally impaired children and youth.

866K. Field Experience: Emotionally Impaired
Fall, Winter, Spring. Summer of odd-numbered years. 3 to 12 credits. May reenroll for a maximum of 18 credits. Master's students with an emphasis in emotionally impaired, approval of department.
Supervised graduate field experience in educational programs for the emotionally impaired.

866M. Independent Study: Emotional Impairment
Spring. 2 to 6 credits. May reenroll for a maximum of 12 credits. Graduate students. Supervised study in emotional impairment conducted according to a written agreement stating the problem or topical area of study, the methodology and the product of the study.

867J. Advanced Methods and Materials in Special Education: Mentally Handicapped Children and Youth
Winter. 3(3-0) CEP 425B, CEP 425C, CEP 425C.
An analysis of research, trends, and programs in the area of mental retardation. Emphasis upon understanding the relationship these factors have to problems of curriculum, teaching methods, guidance of students, and general classroom management.

867K. Field Experience: Mental Retardation
Fall, Winter, Spring. 1 to 12 credits. May reenroll for a maximum of 12 credits. Approval of instructor.
Supervised graduate field experience in educational programs for the mentally retarded.

867M. Independent Study: Mental Retardation
Spring. 1 to 12 credits. May reenroll for a maximum of 12 credits. Approval of instructor.
Supervised study in mental retardation conducted according to a written agreement stating the problem or topical area of study, the methodology and the product of the study.

868A. Advanced Methods and Materials in Special Education: Pre-Vocational/Vocational Curriculum for SEI/Autistic Students
Fall. 3(3-0) Approval of instructor.
Overview of autism and rehabilitation services. Assessment procedures, placement criteria and pre-vocational/vocational curriculum. Skill development for severely emotionally impaired/autistic students.

868B. Advanced Methods and Materials in Special Education: The Severely Impaired/Autistic Student in the Home and School
Spring. 3(3-0) Approval of instructor.
A comprehensive exploration of autism in terms of diagnosis, treatment and prognosis. The effect of autism on the family unit, the community and the school system.

868C. Advanced Methods and Materials in Special Education: Communication Strategies for Teachers of Autistic Students
Spring. 3(3-0) Approval of instructor.
Design and implementation of a language and communication curriculum for autistic students. Traditional language development and alternative modes of communication stimulation.

868D. Seminar: Severely Emotionally Impaired/Autistic
Fall, Winter, Spring. 2(2-0) May reenroll for a maximum of 6 credits. Approval of instructor.
Coordination of course work and field experience for the SEI/Autistic emphasis. Information regarding autism, task analysis, curriculum, research.

868K. Severely Emotionally Impaired/Autistic
Fall, Winter, Spring. 3 to 6 credits. May reenroll for a maximum of 18 credits. Approval of instructor.
Supervised practice working with learning disabled and in a clinic setting on campus; applying skills learned in related course.

868A. Education of Mildly Impaired Learners
Fall. 3(3-0) CEP 460.
Comprehensive introduction to the field of learning disabilities including theory, issues, programs, characteristics, terminology, and major components of the law.

868B. Principles of Formal and Informal Assessment of Mildly Impaired Students
Fall, Winter. 3(3-0) CEP 460. CEP 869A or approval of instructor.
Methods, techniques and instruments for identifying and diagnosing academic problems of analysis of formal and informal assessment strategies. Interpretation of diagnostic profiles.

869A. Teacher Consultant Skills for Mainstreamed Students
Spring. 3(3-0) CEP 869B. Two years special education teaching experience or approval of instructor.
Consultant skills including role identification, problem-solving, consultation, individual and group communication processes, inservice activities, school survival and study skills curriculum.

869B. Personal Adjustment and Career Preparation for the Mildly Impaired Secondary Student
Winter. 3(3-0) CEP 869A, CEP 869B or concurrently.
Assessment procedures and instructional methodology appropriate for learning disabled students. Various programming options and outcomes will be contrasted. Emphasis on instruction in learning strategies.

869C. Diagnosis and Remediation of Mathematics for Mildly Impaired Students
Winter. 3(3-0) CEP 869A, CEP 869B. Cognitive characteristics of mildly impaired students and effects on mathematics and problem solving. Formal and informal assessment techniques. Methods and strategies for remediation.

869F. Classroom Management-Mildly Impaired
Fall. 3(3-0)
Characteristics of effective classroom management, the nature of sound instructional practices for promoting learning by mildly impaired students and the application of these principles to various special education settings.

869J. Behavior Management: Diagnostic and Remedial Practices for Mildly Impaired Students
Spring. 3(3-0) Graduate special education majors only.
Applied behavior analysis in the behavior management of mildly impaired students. Applications in classroom and consultation skills.

869K. Learning Disabilities Practicum
Fall, Winter, Spring. Summer. 1 to 12 credits. May reenroll for a maximum of 12 credits. Approval of instructor.
Supervised practice working with learning disabled students in educational programs for the learning disabled and in a clinic setting on campus; applying skills learned in related courses.

869M. Independent Study: Learning Disabilities
Fall. 3 to 12 credits. May reenroll for a maximum of 12 credits. CEP 460, CEP 869B, CEP 869F, CEP 869G.
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.

870K. Field Experience: Teaching Visually Handicapped Learners
Winter, Spring. 3 to 12 credits. May reenroll for a maximum of 18 credits. Approval of department.
Supervised graduate field experience in educational programs for the visually handicapped.

871K. Field Experience: Teaching Blind/Deaf Learners
Winter. Spring. 3 to 12 credits. May reenroll for a maximum of 18 credits. Approval of department.
Supervised graduate field experience in educational programs for the blind/deaf.

Counseling, Educational Psychology and Special Education — Description of Courses
872. Analysis of Special Education Research
Winter of odd-numbered years. 3(3-0)
Approval of department.
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.

874. Community Agency Programs for the Handicapped
Summer of odd-numbered years. 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.

875B. Special Education Finance
Winter. 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.

875C. Special Education Law
Spring of odd-numbered years. 3(3-0) Approval of instructor.
Analysis of State and Federal legislation, regulations, and litigation as related to special education and impact on administration of those programs. Includes study of current and precedent setting court decisions.

875D. Administration of Educational Program in Special Education Programs
Winter, Summer. 3(3-0) Approval of department.
Designed to promote the study of application of theory and research to specialized program areas. Persons will normally select the section allied to their major program area. Organization and administrative aspects of special education programming, Federal, state, intermediate and local district level programs in special education are reviewed.

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

881. Workshops in Counseling, Educational Psychology and Special Education
Fall, Winter, Spring, Summer. 1 to 6 credits. May reenroll for a maximum of 6 credits. Approval of department.
Laboratory approach which provides opportunities for experienced educational personnel to concentrate their study on common problems in counseling, educational psychology, or special education.

882. Seminars in Counseling, Educational Psychology and Special Education (MT/C)
Fall, Winter, Spring, Summer. 1 to 9 credits. May reenroll for a maximum of 15 credits if different topics are taken. Approval of department.
Seminars in the various fields of emphasis in counseling, educational psychology and special education.

883. Readings and Independent Study in Counseling and Educational Psychology
Fall, Winter, Spring, Summer. 1 to 6 credits. May reenroll for a maximum of 15 credits. Approval of department.
Study on an individual or group basis in the various fields of emphasis.

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

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

900A. Psychometric Theory
Spring of odd-numbered years. 3(3-0)
CEP 800, CEP 905.
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.

900B. Problems of Educational Measurement
Spring of odd-numbered years. 3(3-0)
CEP 800, 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.

900D. Advanced Topics in Classical Test Theory
Winter of odd-numbered years. 3(3-0)
CEP 905, CEP 906.
Refinements and extensions of classical test theory approaches to the design and interpretation of educational measures. Primary attention given to generalizability theory and its applications.

900E. Using Standardized Tests for Decision Making
Fall, Spring. 3(3-0) CEP 401 or approval of department.
School administrative decision making based on information yielded by standardized tests. Participants will also engage in private consultations with the instructor concerning system or building data.

904. Quantitative Methods in Educational Research
Fall, Winter, Spring. 4(4-0)
Pretest and approval of instructor.
Application of descriptive statistical techniques to educational data. Introduction to estimation and tests of hypotheses. Interpretation of statistical reports.

905. Quantitative Methods in Educational Research: Advanced Methods
Fall, Winter, Spring. 4(4-0) CEP 904 or pretest, 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.

906. Quantitative Methods in Educational Research: Experimental Design in Education
Winter, Spring, Summer. 4(4-0) CEP 905.
Theory and practice in the design, analysis, and interpretation of experimental and quasi-experimental research.

907A. Advanced Research Methods in Education
Fall. 4(4-0) CEP 903, CEP 904 or CEP 906.
Principles and techniques in survey research with limited consideration of content analysis and observational studies. Sampling, instrumentation, data collection, and data analysis.

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

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

Winter of even-numbered years. 3(3-0) CEP 914 or PSY 810; CEP 904, CEP 905.
Review existing research and methods for study of individual decision making, judgment and problem solving in a variety of fields — education, medicine, clinical psychology, business, etc., and their implications for education and training.

913. Seminar in Research on Teaching
Fall. 3(3-0) EDE 913, T.E. 924, Winter. 3(3-0) Approval of instructor. Interdepartmental with the Department of Teacher Education.
Critical survey of five approaches to research on teaching. Students develop a framework for organizing the literature, methods, and issues in the field.

915. Language, Literacy, and Learning
Spring. 3(3-0) CEP 811, CEP 904, PST 414, LIN 401 or approval of instructor.
An overview of the psychological foundation of language processes (reading, writing, speaking, listening) with emphasis on the unique and the overlapping features across the four language areas.

917. Cognitive Theories of Knowledge Acquisition
Winter of odd-numbered years. 3(3-0) CEP 411 or CEP 811 or approval of instructor.
Interdepartmental with the Department of Teacher Education.
Cognitive research and theories about the growth of knowledge in academic disciplines and the acquisition of disciplinary knowledge by elementary and secondary school students.
919. Psychology and Pedagogy of Reading
Spring. 3(3-0) CEP 811. T E 820, CEP 915 or approval of instructor. Interdepartmental with the Department of Teacher Education.
Psychological foundations of reading process, and instruction in reading. Cognitive processes and implications for models of reading are emphasized.

925. Conceptual Foundations of Educational Research
Fall. 3(3-0) Approval of instructor. Interdepartmental with and administered by the Department of Teacher Education.
Epistemology and ideology in educational research. Analysis of concepts of method, causation, objectivity and subjectivity in historical perspective.

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

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

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

934A. Seminar in LOGO Educational Research
Fall. 3(3-0) CEP 834 or CEP 834.
Survey of current research and educational applications of LOGO; analysis of LOGO list-processing characteristics.

935. Seminar in Principles and Practice of Instructional Consultation
Spring. 3(3-0) CEP 831A, CEP 831B, CEP 410, approval of instructor.
Theoretical framework for consultation with instructional development clients. Case studies, role play simulations, debriefings. Application of the principles and development of consultation strategies and styles.

929. Policy and Legal Issues in Testing
Spring of even-numbered years. 3(3-0) CEP 401. Interdepartmental with and administered by the Department of Teacher Education.
Public policy and legal issues concerning the use of standardized testing to make critical decisions about individuals in American public education.

940. Educational Applications of Item Response Theory
Spring of odd-numbered years. 3(3-0) CEP 800, CEP 905.
Assumptions, model selection, model fit, estimation of item/ability parameters, equating, scaling, item banking and test construction with the Ruch, two- and three-parameter logistic models. Computer experience using BICAL and LOGIST.

942. Multivariate/Data Analysis in Education
Spring of even-numbered years. 4(4-0) CEP 904, CEP 905, CEP 906.
Multivariate analysis techniques used in education and educational psychology; emphasis on techniques for analysis of designed experiments and methods for analysis of repeated measures data including application and interpretation.

945A. Counseling Theories
Fall. 3(3-0) Approval of instructor. Interdepartmental with and administered by the School of Health Education, Counseling Psychology and Human Performance.
Survey of counseling theories and research with emphasis on current issues which have implications for counseling practice or for counselor education.

945B. Psychology of Vocational Development
Winter. 3(3-0) Approval of instructor. Interdepartmental with and administered by the School of Health Education, Counseling Psychology and Human Performance.
Relationship between psychological concepts and vocational development.

949B. Learning Foundations of Counseling Psychology
Fall. 3(3-0) HCP 949A or approval of instructor. Interdepartmental with and administered by the School of Health Education, Counseling Psychology and Human Performance.
Principles of learning and their application to the counseling process.

953. Ethics in School and Counseling Psychology
Spring. 3(3-0) Doctoral students in counseling psychology or school psychology. Interdepartmental with and administered by the Department of Teacher Education.
Professional ethics, standards, principles, guidelines and issues concerning the training and professional activities of counseling psychology and school psychology. Relevant legal issues and precedents.

975A. Field Experience: Special Education Administration Simulation
Spring. 3(0-9) Approval of instructor.
Supervised graduate practice in administration of the Special Education program of a simulated school district.

975B. Field Experience: Special Education Administration
Fall, Spring. 3 to 12 credits. May reenroll for a maximum of 18 credits. Approval of department.
Supervised graduate practicum or internship in special education administration.

976. Policy Issues in Special Education
Fall. 4(4-0) Graduate students and approval of instructor.
Policy concerns in special education including economic, social, legal, and organizational issues. Policy implications within the theoretical framework of organizational change.

982. Seminars in Counseling, Educational Psychology and Special Education (MFT)
Fall, Winter, Spring, Summer. 1 to 9 credits. May reenroll for a maximum of 15 credits if different topics are taken. Approval of department.
Seminars in the various fields of emphasis in counseling, educational psychology and special education.

983. Readings and Independent Study in Counseling and Educational Psychology
Fall, Winter, Spring, Summer. 1 to 6 credits. May reenroll for a maximum of 15 credits. Approval of department.
Study on an individual or group basis in the various fields of emphasis.

984. Laboratory and Field Experience in Counseling and Educational Psychology
Fall, Winter, Spring, Summer. Variable credit. Approval of department.
Supervised graduate practicums, observations, internships, and externships in the various areas of emphasis.

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

Criminal Justice — Description of Courses

110. Introduction to Criminal Justice
Fall, Winter, Spring, Summer. 3(3-0) Agencies and processes of criminal justice, emphasizing historical, constitutional (legal), and political considerations. Criminal justice is also analyzed as a system, with the problems and prospects for change.

210. Introduction to Forensic Science
Spring. 3(3-0) Not open to majors in Criminalistics.

312. Criminalistics I
Fall. 3(6-0) Criminalistics majors.
Criminalistics laboratory techniques. Photography, crime scene recording, reproduction of evidence, latent fingerprints.

313. Criminalistics II
Winter. 3(0-6) C J 312, approval of school.

314. Criminalistics III
Spring. 3(0-6) C J 313, approval of school.