

CURRICULUM AND INSTRUCTION

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COLLEGE OF EDUCATION AND HUMAN SERVICES

Aikman, Arthur L., Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1965; 1964.

Barrette, Pierre P., Associate Professor, *Emeritus*, Ed.D., University of Massachusetts, 1971; 1978.

Bauner, Ruth E., Associate Professor, *Emerita*, Ph.D., Southern Illinois University Carbondale, 1978; 1956.

Becker, Jerry P., Professor, Ph.D., Stanford University, 1979; 1967.

Bedient, Douglas, Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1971; 1969.

Boykin, Arsene O., Associate Professor, *Emeritus*, Ed.D., University of Illinois, 1964; 1972.

Campbell, James A., Associate Professor, Ph.D., Ohio State University, 1978; 1989.

Casey, John P., Professor, *Emeritus*, Ed.D., Indiana University, 1963; 1964.

Copenhaver, Ron, Associate Professor, *Emeritus*, Ed.D., Indiana University, 1979; 1978.

Coscarelli, William, Professor, Ph.D., Indiana University, 1977; 1986.

Dale, Doris C., Professor, *Emerita*, D.L.S., Columbia University, 1968; 1969.

DeLaney, Carol, Assistant Professor, Ph.D., Syracuse University, 2004; 2003.

Dixon, Billy G., Associate Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1967; 1961.

Eddleman, E. Jacqueline, Associate Professor, *Emerita*, Ph.D., Southern Illinois University Carbondale, 1970; 1969.

Erickson, Lawrence, Professor, *Emeritus*, Ph.D., University of Wisconsin, 1972; 1984.

Fadde, Peter, Assistant Professor, Purdue University, 2002; 2003.

Gilbert, Sharon L., Associate Professor, Ph.D., Ohio State University, 1988; 1988.

Hungerford, Harold R., Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1970; 1965.

Jackson, James, Associate Professor, *Emeritus*, Ph.D., University of Wisconsin, 1976; 1976.

Jackson, Michael, Professor, *Emeritus*, Ed.D., University of Florida, 1971; 1971.

Jones, Dan R., Associate Professor, *Emeritus*, Ed.D., Indiana University, 1978; 1978.

Karmos, Ann, Associate Professor, *Emerita*, Ph.D., Southern Illinois University Carbondale, 1975; 1975.

Killian, Joyce, Professor, Ph.D., Pennsylvania State University, 1980; 1981.

Lamb, Morris L., Associate Professor, *Emeritus*, Ed.D., University of Oklahoma, 1970; 1970.

Lin, Cheng-Yao, Assistant Professor, Ph.D., University of Illinois at Urbana-Champaign, 2003; 2004.

Loh, Christian Sebastian, Assistant Professor, Ph.D., University of Georgia, 2004; 2004.

Malone, Willis E., Professor, *Emeritus*, Ph.D., Ohio State University, 1950; 1939.

Matthias, Margaret, Professor, *Emerita*, Ph.D., Southern Illinois University Carbondale, 1972; 1969.

McIntyre, D. John, Professor, E.D., Syracuse University, 1977; 1977.

Mogharreban, Catherine N., Associate Professor, Ph.D., Southern Illinois University, 1990; 1998.

Moore, Eryn E., Assistant Professor, *Emerita*, Ph.D., Southern Illinois University Carbondale, 1976; 1968.

Mumba, Frackson, Assistant Professor, Ed.D., Illinois State University, 2005; 2005.

Nelson, Joann N., Assistant Professor, *Emerita*, Ph.D., University of Illinois, 1980; 1982.

Norris, William, Associate Professor, *Emeritus*, Ed.D., Indiana University, 1973; 1977.

Pearlman, Susan F., Associate Professor, Ph.D., University of Missouri-Columbia, 1987; 1989.

Post, Donna M., Associate Professor, Ph.D., Pennsylvania State University, 1990; 1990.

Pultorak, Edward G., Associate Professor, Ph.D., Indiana University, 1988; 1988.

Quisenberry, James D., Professor, *Emeritus*, Ph.D., Indiana University, 1972; 1971.

Quisenberry, Nancy L., Professor, *Emerita*, Ed.D., Indiana University, 1971; 1971.

Seiferth, Berniece B., Professor, *Emerita*, Ed.D., University of Missouri, 1955; 1955.

Shepherd, Terry R., Associate Professor, *Emeritus*, Ph.D., University of Illinois, 1971; 1971.

Shrock, Sharon A., Professor, Ph.D., Indiana University, 1978; 1984.

Sloan, Fred A., Professor, *Emeritus*, Ed.D., George Peabody College for Teachers, 1959; 1968.

Smith, Lynn C., Associate Professor and Interim Chair, Ph.D., University of Georgia, 1984; 1984.

Solliday, Michael, Associate Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1975; 1967.

Test, Joan, Assistant Professor, Ed.D., Harvard University, 1988; 1998.

Thompson, Stacy D., Assistant Professor, Ph.D., Iowa State University, 1998; 2005.

Volk, Gertrude, Professor, *Emerita*, Ph.D., Southern Illinois University, 1983; 1987.

Waggoner, Jan E., Associate Professor, Ed.D., Memphis State University, 1990; 1990.

Willhite, Gary L., Assistant Professor, Ph.D., Kansas State University, 1992; 1999.

Wise, Kevin C., Associate Professor, Ed.D., University of Georgia, 1983; 1986.

The Department of Curriculum and Instruction offers three graduate degree programs: the Master of Science in Education (M.S.), The Master of Arts in Teaching (M.A.T.), and the Doctor of Philosophy in Education (Ph.D.).

Those pursuing the M.S. or Ph.D. must select a specialty area in curriculum and instruction, early childhood, elementary education, gifted and talented education, instructional development, instructional technology, middle level education, mathematics education, reading and language studies, science and environmental education, secondary education, social studies education, or teacher leadership. Candidates for the M.A.T. must select the secondary education specialty area and an area of concentration. Upon graduation from the program, M.A.T. students are eligible for certification to teach in grades 9-12 *only*. [Those who already possess a bachelor's degree in education are ineligible for the M.A.T. program.]

The Department also offers State of Illinois endorsements as middle level educators (grades 6-9), reading teachers, or K-12 reading specialists. Endorsement opportunities are available to M.S. and Ph.D. candidates as part of their specialty area preparation; M.A. T. candidates earn the middle level endorsement after completion of requirements for the degree. Endorsements in specific secondary level courses (e.g., chemistry, physics, and psychology) are also available. All such endorsements are arranged through the state and may require additional course work as well as a state-level transcript analysis.

Admission

Applicants for graduate programs must submit admission forms for both the Graduate School and the Department of Curriculum and Instruction. General requirements for admission to graduate programs are described in Chapter 1 of this catalog; additional requirements for the M.A.T. program are explained in the section that follows. In all cases, a selection and review committee screens applicants on the basis of prior undergraduate and graduate work, grade point average, as well as standardized test scores, work experience, and letters of recommendation as needed. The committee may recommend admission for candidates with specific academic deficiencies if, in its opinion, a candidate's application materials demonstrate unusual professional promise.

Application materials may be obtained by addressing a request to: Coordinator of Graduate Studies, Department of Curriculum and Instruction, Southern Illinois University, 625 Wham Drive, Mail Code 4610, Carbondale, IL 62901. Specific information may be obtained by calling 618-536-2441 or by e-mailing currinst@siu.edu. All programs require a nonrefundable \$45.00 application fee that must be submitted with the application for Admissions to Graduate Study in Curriculum and Instruction. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank.

Master of Arts in Teaching Degree

SIUC's Master of Arts in Teaching (M.A.T.) program is an alternative certification and degree program intended for persons who have successfully completed an undergraduate degree (Bachelor of Arts, Bachelor of Science, or Bachelor of Fine Arts) in the liberal arts or sciences and desire to pursue licensure for teaching at the secondary school level. Those enrolled engage in a year-long internship (two semesters) in a public school setting while also completing university-based studies culminating in the Master's degree. The M.A.T. is designed as a high-quality, technology-rich, accelerated teacher certification program; time-to-degree is approximately fifteen (15) months, including one full academic year and two adjacent or contiguous summer sessions of course work. Those holding undergraduate degrees in teacher education are ineligible for this program.

M.A.T. candidates select an area of concentration most compatible with coursework in the major content area that was completed during a bachelor's degree program. Area of concentration options include:

Agriculture (General)	Health
Art	History
Biological Sciences	Mathematics
Business	Physical Education
English	Social Studies
Family and Consumer Science	Spanish
French	

Upon graduation from the program, candidates will be certified to teach in a school system in Illinois or in a state offering reciprocity. They will be broadly prepared in their content areas, and will possess leadership experience pertinent to the public school setting. M.A.T. candidates advance through the program as members of an interdisciplinary cohort of 25 students and are required to work collaboratively within that cohort to investigate and make recommendations about school-based programs and issues using action research methodologies.

Admission.

Admission to the M.A.T. program is highly competitive. Applicants with undergraduate degrees in mathematics, foreign language, or the sciences are targeted (because of national teacher shortages in these content areas), but other applicants meeting admission requirements will be considered. In addition to materials required for general admission to the department and the Graduate School, M.A.T. applicants must submit: (1) a résumé; (2) letters of reference from two content area faculty members familiar with the candidate's undergraduate performance; (3) a

pass score from the Illinois Certification System Test of Basic Skills (September or December test dates are recommended); and (4) a pass score from at least one Illinois Certification Testing System Test of Subject Matter Knowledge in an appropriate secondary level teacher certification area (September or December test dates are recommended). Candidates must meet the following minimum grade point requirements (based on a 4.0 scale): (1) an overall undergraduate grade point average of 2.75; (2) a grade point average of 2.75 in the final 60 hours of undergraduate course work; and (3) a grade point average of 2.75 in the content area for which certification is sought. In years where the number of qualified candidates exceeds the Department's capacity to handle increased enrollment numbers, candidates may be asked to attend a half-day admission seminar during which an on-site essay and videotaped interview will be obtained for use in making final selection decisions.

Retention and Graduation

Students in the M.A.T. program are expected to complete the degree in two intersession/summer terms and one academic year. To complete degree requirements within these 15 months, candidates enroll in the following blocks of courses to earn a minimum of 41/maximum of 50 graduate credits, dependent on the area of concentration selected.

Intersession 1	CI 543 (5):	Fundamentals of Teaching and Learning
Summer 1	SPED 408 (3):	Integrating Children and Youth with Disabilities in Normalized Environments
	CI 544 (3):	Action Research Methods
	EDUC 550 (3):	Experimental Education (Introduction to the Library of Congress <i>Adventure of the American Mind</i> Technologies)
Fall	Content Area Methods (3-6) ¹	
	Content Area Elective (3-4) ²	
	CI 594-K (4):	M.A.T. Apprenticeship (teaching practicum)
Spring:	Content Area Elective (3-4) ³	
	EDUC 501 (6):	M.A.T. Internship (student teaching)
Intersession 2:	CI 571 (3):	Secondary School Curriculum
Summer 2	CI 465 (3):	Advanced Teaching Methods
	CI 561 (3)	Reading and Learning Content and Technical Text
	CI 533 (3):	Instructional Leadership (Teacher Leadership)

To remain in the program, M.A.T. candidates must maintain a minimum overall graduate grade point average of 3.25 and obtain successful field experience evaluations at the end of the fall and spring semesters.

To graduate, the candidate must: (1) prepare and share publicly a professional exhibit to demonstrate professional growth over the 15-month degree program; (2) publicly present results and recommendations from an action research collaborative project to a university and school faculty review committee; (3) achieve the equivalent of a 3.0 in the teaching apprenticeship and internship; and (4) successfully implement an instructional unit or lesson plan employing Library of Congress *Adventure of the American Mind* digital resources and technologies.

Master of Science in Education Degree

The Master of Science in Education degree in Curriculum and Instruction requires the completion of a minimum of 32 or 36 hours of course work, depending on the research requirement selected. At least 15 of the required semester hours must be at the 500 level and taken at SIUC. The student must also meet Curriculum and Instruction core course requirements, research requirements, and specialty area requirements. No more than 11 semester hours of credit earned at another NCATE-accredited college or university may be accepted toward this degree.

Each candidate's program is planned in consultation with a faculty adviser from the specialty area selected by the student, with consideration for the student's interests, experience, and specialty area. Nondeclared graduate students are advised to consult with the department chair concerning admission to the master's program.

A student desiring teacher certification (preschool, elementary, secondary, or K-12) must be admitted to the Teacher Education Program and must follow the teacher certification entitlement process established by SIUC in conjunction with the Illinois State Board of Education. An alternative route to certification is available through

¹ Content area methods courses vary by area of concentration and credit hour assignment. In addition, they may or may not carry graduate credit, but are required for program completion or certification.

² Content area elective courses should be at the 400-level or above; credit hours vary by area of concentration.

³ Content area elective courses should be at the 400-level or above; credit hours vary by area of concentration.

the College of Education and Human Services for qualified candidates. Several areas of study offer coursework designed to meet certification or endorsement requirements set by the Illinois State Board of Education. Consultation with an adviser and a carefully determined program of study can lead to the desired certification or endorsement.

Admission and Retention. Admission to the master's program requires a 2.7 gpa for the last 60 hours of the bachelor's degree as well as the recommendation of the specialty area faculty. A TOEFL score of at least 550 (220 computerized score) is also required for international students. Students must maintain an overall 3.0 graduate gpa to be retained in the master's program. The progress of each student is reviewed periodically. Students who do not make satisfactory progress, or who violate the regulations of the department, college, or university, may be dropped from the program.

Program Requirements. The Master of Science in Education degree in Curriculum and Instruction requires a nine semester hour professional core and specialty area courses (12 to 15 semester hours). The professional core consists of C&I 500, Research Methods in Education; C&I 503, Introduction to the Curriculum; and C&I 504, Systematic Approaches to Instruction. All professional core courses must be completed with a grade of C or better, and an overall grade point average of 3.0 must be obtained for the professional core. The specialty area program consists of either 23 semester hours of coursework including a thesis or 27 semester hours of coursework. The minimum number of required semester hours is 32 for students completing a thesis or 36 for students completing the coursework only option.

Doctor of Philosophy in Education Degree

The Doctor of Philosophy in Education degree with a concentration in Curriculum and Instruction is designed for teachers and other educational personnel who seek to improve their performance in general and specialized areas in either the public schools or the private sector. This program is designed for students who desire positions requiring advanced preparation at the highest level with emphasis on theories of curriculum and instruction and in-depth preparation in research. For example, this program is oriented toward students who aspire to positions with institutions of higher education, state departments of education in the United States, ministries of education in foreign countries, educational sections of human service agencies, business and industry, and public schools.

Admission. In addition to the application for admission to the Graduate School, the applicant must also complete the departmental application for admission to the concentration and the related specialty area. A selection and review committee screens the applicant on the basis of prior graduate work, grade point average, standardized test scores (Graduate Record Examination), research ability, work experience, and letters of recommendation. The TOEFL score is required for international students. The selection committee recommends admission of the student only if the specialty area has an appropriate sponsor for the applicant and if a faculty member who is qualified to direct dissertations agrees to serve as chair of the student's doctoral committee.

The admissions committee may possibly recommend a student for admission who shows some deviation from departmental standards if, in the committee's opinion, the student shows unusual professional promise.

Retention. Any prospective doctoral candidate with a grade point average of less than 3.25 and 20 semester hours of doctoral work will not be allowed to continue in the program and will not be re-admitted at a later date. Students must accumulate an overall grade point average of 3.50 for all doctoral work to qualify to take the preliminary examination.

Prior to the completion of 30 semester hours of course work, students meet with their major professors to determine whether or not to continue as doctoral students. Such matters as grade point average, progress in the program, course completion, motivation, general academic scholarship, and skills in writing and research are considered. A report is then made to the doctoral committee and the department chair. Students who are not making satisfactory progress or who violate the regulations of the department, college, or university, may be dropped from the program.

Program Requirements. The concentration in Curriculum and Instruction has both College of Education and Human Services and departmental requirements. A minimum of 64 semester hours beyond the master's degree is required. The College of Education and Human Services professional core of 8 semester hours consists of EDUC 590, Doctoral Seminar in Cultural Foundations of Education and EDUC 591, Doctoral Seminar in Behavioral Foundations of Education.

The Curriculum and Instruction requirements include a core of nine semester hours; at least 23 semester hours in the selected specialty area; research tools usually totaling 8 semester hours or the equivalent (hours for research tools are not counted in the total of 64 semester hours); and a minimum of 24 semester hours of dissertation. An internship of 2 to 8 semester hours is highly recommended. Courses comprising specialty area hours other than the core courses are determined by the student and the doctoral committee. The professional core of courses in the Curriculum and Instruction concentration includes: C&I 582, Advanced Research Methods in Education; C&I 583, Instructional Theory, Principles, and Practices; and C&I 584, Curriculum Theory,

Foundations, and Principles. All professional core courses must be completed with a grade of C or better, and an overall grade point average of 3.0 must be obtained for the professional core.

Research Requirements. Research tools are selected on the basis of their appropriateness for the area of concentration, specialization, and type of dissertation research. At least one research tool, as outlined by the College of Education and Human Services is selected by the doctoral committee in cooperation with the graduate student. The 8 options available are: quantitative methods, historical methods, foreign language methods, philosophical methods, qualitative methods, and other methods.

Preliminary Examination. The preparation and direction of the preliminary examination are the responsibility of the specialty faculty and the student's doctoral committee. Concepts related to curriculum, instruction, and research/evaluation will be integrated into the preliminary examination. Additional oral and written examinations may be required by the student's doctoral committee.

The examination is offered 3 times a year: Wednesday, Thursday, and Friday of the fifth week of each term. A student may take the examination no more than 3 times.

Prospectus, Dissertation, and Final Oral Examination. Students may not register for more than 6 dissertation hours until they have been advanced to candidacy. Having been admitted to candidacy, students submit prospectuses to their doctoral committees for approval. The dissertation must show high attainment in an independent original, scholarly, and creative effort. A student's dissertation will be circulated to members of the doctoral committee at least 3 weeks in advance of the proposed defense.

The Department of Curriculum and Instruction requires an oral examination conducted by the doctoral committee. Oral examinations are open to all interested observers. Notice of the time and place of the examination and the abstract of the dissertation are circulated throughout the department and the University.

Certificate in Gerontology

The Department of Curriculum and Instruction participates in the Certificate in Gerontology interdisciplinary program. For more information on the Certificate program, please see Certificate Programs in Chapter One of the Catalog.

Certificate in Conflict Resolution

The Department of Curriculum and Instruction participates in the interdisciplinary Graduate Certificate in Conflict Resolution. The Department offers C & I 402 and C & I 594 as courses that can fulfill program requirements in required and elective areas. For more information on the Certificate program, please see Certificate Programs in Chapter One of the Catalog.

Courses (CI)

400-3 Simulation and Gaming. Analyzes the role of simulation and gaming in instruction, the availability of commercial games, board games, simulation devices and computer games and preparation of teacher-made games and simulations.

402-3 The Study of Cultural Diversity in Education and Family Services. The student examines origins, characteristics of behavior, learning patterns, family constellations and lifestyles of the diverse cultural groups in our community, state and nation. Students will identify their own cultural background and biases; recognize diversity resulting from ethnic origin, gender, age or disability; and experience ways of learning about cultures other than their own that promote constructive communication and integration into all as

403-3 Child Abuse and Neglect. Examines the many facets of child abuse and neglect. Emphasis is on current research in the field, as well as the roles and responsibilities of various professionals who work with children and their families.

404-3 Infant Development. Current theories and knowledge concerning growth and development of infants with related laboratory field experiences. Prerequisite: 237 or Psychology 301 or equivalent.

405A-2 Methodologies For Group Care of Infants and Toddlers. Students will develop competencies and skills needed by early childhood professionals for work with children up to the age of three in an inclusive group care situation. Emphasis is on planning developmentally appropriate curriculum and assessment and stimulating environments for infants and toddlers. Students are required to have concurrent enrollment in 405b. Prerequisite: 318a, 318b, 404.

405B-2 Practicum in Methodologies for Group Care of Infants and Toddlers. This practicum will prepare students to work in optimal learning environments for infants and toddlers. Participation is four hours per week (fall and spring) and eight hours per week (summer) at the SIU Child Development Laboratories. Students are required to have concurrent enrollment in 405a. Prerequisite: 318a, b, 404.

407-3 to 9 (3 per topic) Diagnostic Teaching Strategies for Classroom Teachers. Diagnostic instruments and teaching techniques with an emphasis on understanding and teaching students underachieving in the areas of (c) Language arts, (e) Mathematics, and (f) Reading. Prerequisite: 423 for (c), 315 for (e), 312 for (f) and/or consent of instructor.

409-3 Creative Teaching. To assist pre- and in-service teachers in acquiring methods and materials that will improve instruction in the public school classroom, with special attention to the characteristics and needs of students. Prerequisite: Education 315.

410-2 Creative Writing in the Public School. Techniques of encouraging creative writings in the schools.

412-3 to 15 (3 per topic) Improvement of Instruction in Early Childhood Education (Preschool-Grade 3). Examines recent findings, current practices and materials used in early childhood education in the fields of (c) Language arts, (d) Science, (e) Mathematics, (f) Reading and (g) Social studies. Prerequisite: specialized methods course for the field of study selected by the student.

413-3 Language Development of the Young Child, 0-8 Years. The normal language development and communication skills of the young child will be the focus of this course; attention will be given to an integrated, holistic philosophy toward development and learning in young children ages 0-8; specifically focusing upon social and environmental influences on the development of language and literacy, students will observe, listen, record and analyze samples of young children's communication. Prerequisite: 237 or Psychology 301 or graduate standing.

415-3 Modern Approaches to Teaching Middle School Mathematics (Grades 4-8). Examines current mathematics materials and teaching approaches. Hands-on experience with a multitude of teaching aids including microcomputers and problem solving materials. Student exchange of ideas and discussion of activities for classroom use. Prerequisite: 315 or consent of instructor and an overall gpa of 2.5.

417-3 Administration of Early Childhood and Family Programs. This course introduces students to the planning, organizing, and daily management of programs serving young children and their families. Topics will include funding/budgeting, staffing, programming, and evaluation. Prerequisite: 318.

418-3 History and Philosophy of Early Childhood Education. A survey of the history and philosophies of early childhood education with implication for current program practices. Students' analysis of their personal philosophy of early childhood education. Prerequisite: senior or graduate standing; 318; or consent of instructor for graduate students.

419-3 Child, Family and Community Involvement. The course is designed to provide students with the knowledge and skills needed to work successfully with parents and parent groups in individual and community settings. The focus will be on strengthening adult-child and parent-staff relationships in home, school and community settings. Parent involvement in early childhood programs and parent education will be stressed. Prerequisite: 227 and/or concurrent enrollment in 318; or consent of instructor for non-early childhood major and/or graduate students.

420-3 Adult Literacy Strategies. The focus is on understanding the problems of the individual whose literacy level does not permit full participation in economic, social, family and civic opportunities. Emphasis is placed on developing strategies to support and strengthen adult literacy skills.

421-3 Building Family Literacy Programs. This course will provide an in-depth look at family literacy. Emphasis will be placed on the history and foundations of family literacy, research, program models, quality programming, program evaluation and funding. The course is designed for both the experienced and developing family literacy professional. Prerequisite: 419.

422-3 Teaching Reading in the Elementary School. (Same as Special Education 422) Examination of the reading process with emphasis on the factors and conditions that affect reading. Emphasis also on the formulation of reading and its implications in relation to methods, materials, organizational procedures, and evaluation techniques. Prerequisite: for Elementary Education majors: grade of C or better in 321, 435 and Education 310 or consent of instructor; for Special Education majors; admission to the Teacher Education Program.

423-3 Teaching Elementary School English Language Arts. Oral and written communication processes with emphasis on the structure and process of the English language arts in the elementary school. Specific attention to the fundamentals of speaking English, writing, spelling and listening. Study of learning materials, specialized equipment and resources. Prerequisite: Speech Communication 101 or equivalent, C or better in Curriculum and Instruction 321 and 435 or consent of instructor.

424-3 Teaching Elementary School Social Science. Emphasis on the structure and process of teaching social science in the elementary school setting. Specific attention to the fundamentals of developing social science objectives, planning units, developing a general teaching model, organizing the curriculum and evaluating behavioral change. Study also study learning materials, specialized equipment and resources. Prerequisite: grade of C or better in 312, 423 and 426 or consent of the instructor.

426-3 An Introduction to Teaching Elementary School Science. Content and methods of elementary school sciences, grades K-8. Emphasis on the materials and strategies for using both traditional and modern techniques of science education. One or more field trips. Prerequisite: Grade of C or better in 315, 435 and Education 315 or consent of the instructor.

427-4 Science Process and Concepts for Teachers of Grades N-8. (Same as Botany 462.) Specifically designed to develop those cognitive processes and concepts needed by elementary school teachers in the teaching of modern science programs. Lecture three hours per week, laboratory two hours per week. One or two additional field trips required. Prerequisite: grade of C or better in 312, 423 and 426 or consent of instructor.

428-3 Inquiry Skills for Teaching Junior and Senior High School Science. The major focus will be the application of inquiry skills as used in all areas of science instruction at the junior and senior high school levels; students will be expected to demonstrate mastery of basic and integrated science process skills through conducting and reporting results of science investigations.

435-3 Literature for Children and Early Adolescents. Studies types of literature; analysis of literary qualities; selection and presentation of books and other media for children and early adolescents; and integration of literature in preschool, elementary and middle school and library settings. Prerequisite: admission to the Teacher Education Program, C or better in English 101 and 102, and overall GPA of 2.75; or consent of instructor.

437-3 Instructional Technology in Training Programs in Business and Industry. Examines the role that performance and instructional technology plays in current training practices in business and industry. The organization, staffing, budgeting and evaluation of training and development departments are presented. The kinds of performance problems typically encountered by corporate training departments are addressed. Field trips are expected.

441-3 Multicultural Literature for Children. Identification, selection and evaluation of books and audiovisual materials dealing with various cultural groups such as African Americans, Asian Americans, Native Americans, Hispanic Americans and European Americans. Prerequisite: 435 or consent of instructor.

445-3 Literature for Young Adults. The selection and use of books and other educational media for students in the junior and senior high school.

452-3 Small Format Video Production in Education. An introduction to small format black-and-white and color video equipment in educational settings. Emphasis is on understanding the role of video as an instructional and informational tool and on the principles of design that determine instructional video's effectiveness. Laboratory fee: \$20.

455-3 Design and Development of Self-Instruction Systems. Introduction to the theory and practice of self-instruction systems with a particular emphasis on the creation of instruction for mastery. Various self-instruction systems are reviewed and procedures for designing, developing and evaluating these systems are discussed. Includes planning a teaching unit and creating a self-instruction package for the unit. Laboratory fee: \$20.

458-3 Classroom Teaching with Television. Classroom utilization of open and closed circuit television. Emphasis is placed on the changed role of the classroom teacher who uses television. Evaluation of programming, technicalities of ETV and definition of responsibilities are included. Demonstration and a tour of production facilities are provided.

460-3 Teaching Reading and Writing in the Middle Grades. Familiarizes prospective middle grades teachers with issues relevant to instruction in literacy and communication processes and skills essential to learning in any subject area. Students in this course will be expected to demonstrate personal competency relevant to these skills. In addition they will demonstrate skill in and understanding of strategies for identifying problems and developing literacy competencies in young adolescents. Intended as a foundation course in innovative pedagogy, 460 will introduce students to numerous concepts and practices, many of which will be revisited in the context of later courses. Prerequisite: 312 for elementary majors, 361 for secondary majors or consent of instructor.

461-3 Content Literacy Strategies. For middle grade teachers who desire strategies for helping students comprehend content encountered in narrative and expository text. Materials, lesson plans and teaching strategies to help middle grade students move from basic to more advanced reading, writing, studying and learning skills are featured. Prerequisite: 312 or 512.

462-3 Middle and Junior High School Programs. Focuses on the development of middle and junior high school curriculum and the identification of instructional activities, which relate to the early adolescent. Emphasis is placed on development of advisory activities, developmentally appropriate teaching strategies, interdisciplinary unit planning, teaming, and technologies and materials appropriate for teaching early adolescents, ages 10-14. Prerequisite: Education 310 or consent of instructor.

463-3 Meeting in Social and Emotional Needs of Gifted Children. Deals with strategies for meeting the social and emotional needs of gifted children in the classroom. In particular, this course focuses on low-incidence gifted students, including underachievers, minorities and females. The course will not only cover particular curriculum and instruction strategies designed for this population but also will emphasize strategies for teachers to be more facilitative in assisting these students to accept and realize their potential. Prerequisite: 467 or consent of instructor.

464-2 Student Activities. Analysis of extra-class activities and programs in public schools with a focus on the status, trends, organization, administration and problems.

465-3 Advanced Teaching Methods. The focus is on a variety of teaching methods and strategies, which are appropriate for secondary and/or post-secondary educators. Both individual and group methods are emphasized.

466-3 Documenting Accomplished Teaching. This course will help teachers understand and gain requisite skills for participation in the National Board for Professional Teaching Standards (NBPTS) certification process. As part of learning to understand and document NBPTS standards, teachers will describe, analyze and reflect on drafts of written commentaries, videotapes of small and large group lessons, and student work.

467-3 Methods and Materials in the Education of the Gifted. Content focuses on the most appropriate instructional strategies and materials to be utilized with the gifted. Time spent practicing teaching models, designing materials and developing teaching units. Emphasis placed on techniques for individualizing instruction for the gifted and talented students.

468-3 Science Methods for Junior and Senior High Schools. A performance-based approach to instructional skills common to teaching natural science at the junior and senior high school levels. Three class hours and one micro teaching laboratory hour per week. Prerequisite: Education 315 or consent of instructor.

469-3 Teaching Social Studies in the Secondary School. Emphasis is placed upon instructional strategies, curricular designs, and analysis and evaluation of the social sciences, which include the behavioral sciences, economics, geography, history, and political science. Prerequisite: Admission to the Teacher Education Program or consent of the instructor.

473-3 Teaching in Middle Level Schools. This course is designed to acquaint students with the issues of teaching young adolescents and the unique role teachers must play as interdisciplinary team members and resource persons to connect schools and communities. Information from current research area specialists and exemplary practitioners will be used to extend appropriate teaching strategies and supplement background knowledge on special topics related to social, emotional and physical development as it relates to the curricula. Lab fee: \$10. Prerequisite: Curriculum and Instruction 462, Education 310 or consent of instructor.

482-3 Instructional Internet Applications. An introduction to using the Internet to deliver instructional materials and activities. Includes using the Internet to enhance classroom learning through research, communication, and instructional activities. Also covers evaluation, design, and development of Internet-delivered instructional materials. The emphasis is on lesson and workshop level instruction rather than delivering complete courses on the Internet. Laboratory fee: \$20.

483-6 (3,3) Instructional Applications for Microcomputers. A study of the development and use of microcomputers systems in educational settings. Emphasis is upon the characteristics, capabilities, applications and implications of microcomputers and microcomputer lessons, with case studies of their integration into the teaching, learning process.

484-3 Multimedia for Learning. An introduction to the evaluation, design, and development of interactive instructional multimedia programs. The instructional methods of Tutorial, Drill and Practice, Simulation, Games, and Open-Ended Learning Environments are covered. Projects include designing, developing, and use-testing an interactive instructional multimedia program. Laboratory fee: \$20.

486-6 (3,3) Instructional Authoring Systems. Designed to give students experience using authoring systems, languages and utilities for the design, development, production, and integration of WEB-based technology into educational settings. Tools will include various commercial and consortium authoring tools, such as the Macromedia Studio. Laboratory fee: \$20. Prerequisite: consent of instructor.

487-3 Web-based Applications for Teachers and Instructors. Survey of trends and developments and laboratory instruction in the use of Web-based applications representative of those used by teachers, education specialists, or instruction in educational settings. An emphasis is placed upon developing skills used by teachers, education specialists, or instructors which enhance and facilitate the education processes within a Web-based learning environment. Laboratory fee: \$20.

495-2 to 8 Field Experience. Supervised learning experiences in settings for children and families and public agencies. Prerequisite: 318, 405 and consent of instructor.

496-2 to 6 (2 to 4 per semester) Field Study Abroad. Orientation and study before travel, readings, reports and planned travel. Includes visits to cultural and educational institutions. Maximum credit hours in any term are 4.

498-1 to 15 (1 to 3 per topic) Workshops in Education. Critical evaluation of innovative programs and practices. Acquaints teachers within a single school system or in a closely associated cluster of school systems with the philosophical and psychological considerations and methods of implementation of new programs and practices in each of the following areas: **(a)** Curriculum, **(b)** Supervision for instructional improvement, **(c)** Language arts, **(d)** Science, **(e)** Mathematics, **(f)** Reading, **(g)** Social studies, **(h)** Early childhood education, **(i)** Elementary education, **(j)** The middle school, **(k)** Secondary education, **(l)** School library media, **(m)** Instruction, **(n)** Educational technology, **(o)** Environmental education, **(p)** Children's literature, **(q)** Family studies, **(r)** Computer based education, **(s)** Gifted and talented education, and **(t)** Teacher education. Maximum of six hours toward a Master's degree. Prerequisite: consent of instructor.

500-3 Introduction to Research Methods in Education. An introduction to research methodology as it is applied in carrying out educational studies. Basic skills of planning, executing and reporting educational research will be studied and applied, with the construction of a research proposal as a term project.

501-3 Improving School Reading Programs. For teachers, reading specialists, instructional leaders. Current issues, trends, practices in improving school reading programs at all levels. Special emphasis on school based management, teachers as change agents, curriculum evaluation, staff development and roles of school personnel. Participants assess existing programs and develop improvement plans. Prerequisite: 512, 513 or 561.

503-3 Introduction to the Curriculum. Deals with the nature, purposes and functions of curriculum planning and development; curriculum design and organizations; curriculum implementation and maintenance; and curriculum evaluation as each component relates to the total curriculum.

504-3 Systematic Approaches to Instruction. Gives graduate students an opportunity to investigate, discuss and apply systematic approaches to instruction. Special emphasis is given to that element of the instructional system, which allows for the integration of instructional media into the process.

506-3 Professional Services for Diverse Family Structures. Case analysis of different family structures through seminar teams. Each team will be responsible for analysis of the interaction of the family structure and the economic, nutritional, and socializing activities carried out within the family-household. Role and sources of assistance through current programs will be included. Prerequisite: consent of instructor.

507-3 The Impact of Public Policy on Family Life. This course focuses on an analysis of policies that impact the lives of children and families and includes an overview of the legislative process at the local, state, and national

levels. The course emphasizes practical ways in which we can become proactive and effective advocates for children and their families.

508-3 Systematic Observation and Analysis of Instruction. Students will learn to use conferencing techniques and to construct and use valid and reliable systematic observation instruments to provide the basis for analysis and feedback about classroom instruction.

509-3 Foundations of Environmental Education. Designed specifically to provide teachers, administrators and curriculum specialists with the knowledge and skills necessary to implement environmental education strategies in both elementary and middle schools. Includes work in ecological foundations, programs currently in use, unit designs, methods and research. One or two field trips may be required.

510-3 Values Education Curriculum. Alternative views of the impact of schooling on children's values will be explored. Current curricular approaches to moral education will be examined with special emphasis given to values clarification and the cognitive-developmental approach of Lawrence Kohlberg. Psychological and philosophical assumptions underlying the major approaches to moral education will be critically examined.

511-3 Seminar in Psychology of Elementary School Subjects. Psychological principles of learning theories as applied to the mastery of materials used in elementary and early childhood education school subjects. Emphasis is placed on implications of theories of learning for curriculum development and instruction.

512-3 Reading in the Elementary School. First course in the reading sequence. Survey of the reading process. Introduction to factors affecting the reading process, the common core of skills, teaching strategies, materials and research.

513-3 Emergent Literacy. A study of early literacy. Explores the foundations of family literacy as the basis for continued development of reading and writing in kindergarten and the primary grades.

514-3 The Pre-School Child. Growth of the child from birth to six years with emphasis on the various aspects of growth and the interrelationships.

515-3 Advanced Remediation in Mathematics. Strategies for the design of prescribed systematic instruction for correcting identified mathematics difficulties. Experience in designing and preparing materials for corrective purposes. Prerequisite: 407e or consent of instructor.

516-3 Teaching Mathematics in the Elementary School. Master's degree level course, which acquaints the student with, approaches to teaching, development of curriculum materials and authoritative positions on the mathematics of grades K-8. Emphasis on teaching aids, problem solving and recent developments at this level. Prerequisite: 315 or consent of instructor.

517-3 Early Childhood Programs: Organization and Administration. Presents an overview of the organization and administration of programs for children ages three to eight with experiences in planning for operating and administering such programs. Prerequisite: 316, 518 or consent of instructor.

518-3 Early Childhood Curriculum and Methods. A survey of current problems and practices in early childhood education for children from three to eight years of age, with emphasis on reading in current research literature. Prerequisite: consent of the instructor.

519-3 Early Child Development Through Home and Preschool. The normal health development of children as it takes place in the home and is promoted by the curriculum of early childhood facilities. Prerequisite: Early childhood graduate students in curriculum and instruction who have completed all core courses.

520-Research in Early Childhood Education. Major trends and current issues in research as they relate to child development and early childhood programs will be explored. Special emphasis will be placed on the relationship of research to professional preparation and practice. Prerequisite: early childhood students who have taken all core courses for completion of the master's degree.

521-4 Advanced Diagnostic Teaching of Reading. Emphasizes diagnostic teaching strategies that teachers and reading specialists employ when dealing with under achievement in reading. Students use informal and formal tests, observation and trial lessons to select instructional materials and activities appropriate to different reading/writing problems. Each student tutors persons while being supervised in the Clinical Center. Prerequisite: 512 or 513 or 561, 407f and consent of instructor.

523-3 Language Arts in the Elementary School. The practical bearing of investigation and theory on the improvement of current practices in the teaching of the language arts other than reading. Attention given to evaluation of teaching materials in these areas. Prerequisite: 423.

524-3 Teaching the Social Studies in the Elementary School. A study of theory and practices of teaching and developing programs in elementary school social studies. Particular attention to be given to trends and issues in social studies. Various social studies models will be examined and evaluated for practical use. Students must demonstrate behaviorally the competencies and skills related to successful performance in the teaching of social studies.

525-3 Integration of Technology into Mathematics Education [PreK-8]. Technology use in mathematics teaching and learning, such as handheld calculators/computers; hands-on experience in teaching with easily learned tools for teaching/learning mental computation, computation, algebra, geometry, probability, statistics and use of software - e.g., Shapemakers, Geometer's Sketchpad, Excel, graphing calculators, computer-based laboratories, data collection devices, interactive websites and other internet resources.

526-3 Problems in Elementary School Science Education. Emphasis upon identifying problems and trends within elementary school science education and planning for research in this field. Prerequisite: 426.

527-3 Advanced Family Studies. Examines contemporary American families with emphasis upon the strengths, diversity, and challenges associated with each of the variant forms of family life. Focuses particularly on the implications of these issues for families with young children.

528-3 Methods for Teaching Mathematics in the Preschool and Early Childhood Grades (Pre K-3). Acquaints the student with the learning characteristics of children and teaching methods at grades pre K-3. Emphasis on concrete manipulative teaching aids, learning readiness and diagnosis of learning difficulties. Prerequisite: 315 or consent of instructor.

529-3 Modern Approaches to Teaching Secondary School Mathematics. (Same as Mathematics 511.) Topics will include problem solving, applications of mathematics and teaching proofs in secondary school mathematics. Practical classroom use of materials will also be emphasized. Prerequisite: consent of instructor.

530-3 Teaching Problem Solving in School Mathematics (Grades K-8-8). Designed to acquaint teachers with problem solving processes and how to integrate problem solving into their teaching. Emphasis is placed on teaching the process of problem solving. Prerequisite: graduate standing or consent of adviser.

531-3 The Elementary School Curriculum. An introductory course in curriculum designed to assist teachers and administrators in making operational decisions in elementary education which are based on knowledge of foundations of elementary education, organization of learning experiences, research in specialized areas, materials and methods, instructional programming and evaluation. Students are required to exhibit curriculum competencies through the creation of products and through demonstration of skill.

532-3 Courseware Design and Analysis. The analysis of principles and strategies employed in the design of computer based courseware and computer based training materials. Emphasis upon examining educational, social and psychological learning principles and the assumptions used by authors of computer software in the design of K-12 software and computer based training materials. Laboratory fee: \$20.

533-3 Instructional Leadership. A study of research and related literature concerning the roles and responsibilities of various instructional leaders in public and private schools, professional development centers, state departments of education and college or university settings. Leadership styles and behaviors, especially as they apply to the academic circumstances and environments in specific case studies, are examined.

534-3 Organization of the Elementary School. An analysis of types of elementary school organizations with special attention to influence of school organization upon the educational program. Application of research findings to selection and use of materials of instruction. Special consideration to classroom teacher's professional problems.

535-3 Reading and Language Arts Research Seminar. Students survey current research in Reading and Language studies and present a research paper to the seminar participants. Prerequisite: 500, nine hours coursework in reading and language arts, and consent of instructor.

536-3 Partnerships and Mentoring the New Professional. A study of the theories, practices and research of Professional Development Schools and other collaborative teacher education and school reform initiatives with special attention given to the issues of collaboration and cooperation, team building and consensus building, honoring diversity and change, and educators as problem solvers.

540-3 Learning Models for Instructional Design and Technology. Surveys models of learning as they apply to the fields of Instructional Design and Instructional Technology. Models ranging from behaviorism to constructivism are covered along with theories concerning cognitive development and motivation. Theories are applied to analyzing instructional situations.

543-5 Fundamentals of Teaching and Learning. First course in the M.A.T. program sequence. Its focus is on development of a specific set of planning skills secondary level teachers need to appropriately design, implement, manage, and assess student learning. The course is offered annually during spring intersession only. Prerequisite: acceptance into specific MAT cohort.

544-3 Action Research Methods. The focus of the course is on learning about action research, learning to develop and use various data collection tools, developing an action research question, learning about and using various data analysis tools, developing a report, and presenting a research report to an audience of colleagues and peers. Prerequisite: 543, Letter grade/DEF.

551-3 Survey of Research and Developments in Educational Media. Survey of research, trends and developments, research techniques, needed research and new developments in educational media and instructional application. Prerequisite: consent of instructor.

553-3 Instructional Development. Intended for media specialists and instructional developers, this course applies current research and technology to the solution of instructional problems. The student is guided through the systematic process of identifying instructional problems, specifying objectives, analyzing tasks and learners, organizing resources, specifying methods and media and assessing outcomes. The role of the instructional developer as a helping professional will also be examined. Prerequisite: 504.

554-3 Utilization of Educational Media. The utilization of print and nonprint materials in instructional implementation and curriculum development. Structured for teachers, media directors, administrators and instructional designers. The increasing role of technological advances in education is stressed as they relate to learning theory and curriculum development.

555-3 Visual Communication. How to communicate with pictures in the classroom, the design of still and motion pictures, pictures used in teaching perception and the place of pictures in advertising and communication.

556-3 Learning Discovery Systems for Instruction. Survey, design and development of learning discovery systems for WEB-based learning. Course includes evaluation, creation and use of microworlds in the design and development of WEB-based, cross-curriculum applications for learning discovery through games and simulations. Prerequisite: 486 or consent of instructor.

557-3 Task Analysis. Builds competence in applying the most current task and content analysis techniques used to make explicit the components of complex human performances and knowledge. Includes learning hierarchy analysis, information processing analysis, path analysis, job task analysis, skills analysis, fault tree analysis, concept analysis, knowledge engineering, matrix analysis, and pattern noting. Prerequisite: 504 or consent of instructor.

560-3 Content Management and Delivery for e-Learning. Survey of trends, developments, and laboratory instruction in the use of Content Management Systems for Internet Delivery of learning materials in education, business and other e-learning settings. Emphasis is placed on learning the process for developing, managing and delivering content and resources to facilitate online learning processes. Prerequisite: 554 or consent of instructor.

561-3 Reading and Learning Content and Technical Text. For secondary and college teachers, and others who desire strategies to help students and workers learn from texts. Special emphasis is on how to help others improve their ability to comprehend, study and use texts and other print material encountered in secondary school and the workplace.

564-3 Curriculum Development for Gifted Students. Presentations related to the knowledge and decision-making required to develop curriculum for gifted students, including philosophy, goals and objectives; designing and sequencing activities; curriculum models for gifted students; evaluation and modification of curriculum. Emphasis is placed on the development of curriculum for gifted students to be used in schools.

566-3 Instructional Strategies for Problem Solving. The focus is on developing those teaching strategies, which will foster and enhance problem solving skills and heuristic thinking. Representative of these teaching skills would be inductive and deductive approaches, discovery and inquiry techniques, and questioning strategies.

569-3 Principles and Trends in Secondary School Science. An evaluation and study of social studies trends and practices as they are related to curriculum, organization and instruction at the junior and senior high school levels.

571-3 Secondary School Curriculum. An introductory course designed to explore the nature and development of the curriculum at the secondary school level. Historical perspective and foundations of curriculum are examined. Functional applications to the public secondary schools are emphasized.

573-3 Perspectives on the Future and Its Schools. Deals with the future development of education and social trends, which will influence that development. Emphasis is placed upon alternative models of education and their social bases.

575-3 Critical Issues in Instructional Supervision. Students will examine the history, nature and evolution of supervision for instructional improvement. Students will be introduced to concepts, theory and research findings from many fields of study that have implications for today's supervisory process. Supervisory assumptions and practices will be examined in light of current knowledge of teaching effectiveness.

576-3 Critical Issues in Teacher Education. Students will examine critical issues, problems, and trends in teacher education. Emphasis is placed on strategies for clarifying the issues, solving the problems and examining the possible impact of the trends.

577-3 Seminar in International Mathematics in Education. Deals with goals, contents, teaching methods, teacher training, curriculum development and research literature on mathematics education at the international level. Prerequisite: graduate standing or consent of adviser.

578-3 Advanced Study of Mathematics Education. Study of the practical and theoretical development of mathematics curricula and instruction, and viewing mathematics curricula and instruction from philosophical and psychological perspectives. Prerequisite: advanced graduate study or consent of adviser.

580-3 Current Trends in Education. Trends, issues, problems in education related to the student, program, school organization, staff, material and media, the school building, and the process of innovation and change.

582-3 Advanced Research Methods in Education. The study and application of advanced skills used in planning, executing, reporting and utilizing educational research. Prerequisite: 500 or evidence of equivalent research competencies.

583-3 Instructional Theory, Principles, and Practices. Presentation of conceptual formulations and skills concerning instructional theory and principles; foundations of instruction; instructional systems and models; delivery processes (logistics), systems, and maintenance of quality control; and evaluation of teachers and students.

584-3 Curriculum Theory, Foundations, and Principles. The course will emphasize the study of the perspectives on curriculum theory that have guided the development of curriculum practice in the United States. Students will critically examine these perspectives and utilize them to develop and defend positions on contemporary curriculum issues.

585-1 to 15 (1 to 3 per semester) Topical Seminar. A graduate level seminar that involves the study of special problems and related research associated with practical educational situations. Problems available for critiquing and analyzing are the following: (a) Curriculum, (b) Supervision for instructional improvement, (c) Language arts, (d) Science, (e) Mathematics, (f) Reading, (g) Social studies, (h) Early Childhood education, (i) Elementary education, (j) The Middle school, (k) Secondary education, (l) School library media, (m) Instruction, (n)

Educational technology, (o) Environmental education, (p) Children's literature, and (q) Family studies, (r) Computer based education, (s) Gifted and talented education, (t) Teacher education. Maximum of six hours toward a Master's degree. Prerequisite: consent of instructor.

586-3 Curriculum Design and Development. Presentations concerning educational planning and curricular decision-making relating to curriculum: aims, goals, and objectives; nature of knowledge, disciplines, and subjects; curriculum structures: sequence and scope; substantive structural models; content and activity selection, product analysis and production; evaluation; and curriculum modification and change.

587-3 Curriculum Implementation and Evaluation. Attention is given to preparing the curriculum specialist to use appropriate techniques and skills to put curriculum programs into practice and to assess the effectiveness of such programs in terms of a wide range of variables, which indicate success or need for curricular modification.

589-3 The Work of the Director of Curriculum and Instruction. The role of the director of curriculum and instruction is the focus of this course. Such topics as the background, current status, and tasks and functions of the position are examined. Additionally, such broad areas of the director's role as needs assessment, program planning and evaluation, and in-service education planning are covered. Prerequisite: 586 or 587 or consent of instructor.

590-1 to 15 (1 to 3 per topic) Independent Readings. Directed readings in literature and research in one of the following areas: (a) Curriculum, (b) Supervision for instructional improvement, (c) Language arts, (d) Science, (e) Mathematics, (f) Reading, (g) Social studies, (h) Early childhood, (i) Elementary education, (j) Middle school, (k) Secondary education, (m) Instruction, (n) Educational technology, (o) Environmental education, (p) Children's literature, (q) Family studies, (r) Computer based education, (s) Gifted and talented education, and (t) Teacher education. Maximum of four hours toward a Master's degree. Prerequisite: consent of instructor.

593-1 to 15 (1 to 3 per topic) Individual Research in Education. The selection, investigation and writing of a research topic under the personal supervision of a member of the departmental graduate staff, in one of the following areas: (a) Curriculum, (b) Supervision for instructional improvement, (c) Language arts, (d) Science, (e) Mathematics, (f) Reading, (g) Social studies, (h) Early childhood, (i) Elementary education, (j) Middle school, (k) Secondary education, (m) Instruction, (n) Educational Technology, (o) Environmental education, (p) Children's literature, (q) Family studies, (r) Computer based education, (s) Gifted and talented education, and (t) Teacher education. Maximum of three hours counted toward a Master's degree. Prerequisite: consent of instructor.

594-(2 to 9 per topic) Practicum. For Master's degree students: professional consultation, teaching demonstration, practical application of advanced theory, work with clinical cases, or program development implementation, and evaluation in school systems, community colleges, or universities. In addition, may involve reading and research directed to special problems involved in on-site situations. Practicum is available in the following areas: (a) Curriculum, (b) Supervision for instructional improvement, (c) Language arts, (d) Science, (e) Mathematics, (f) Reading, (g) Social studies, (h) Early childhood, (i) Elementary education, (j) Middle school, (k) Secondary education, (m) Instruction, (n) Educational technology, (o) Environmental education, (p) Children's literature, (q) Family studies, (r) Computer based education, (s) Gifted and talented education, and (t) Teacher education. A Maximum of nine hours credit may be applied toward a Master's degree. Prerequisite: consent of instructor.

595-(2 to 8 per topic) Internship. Culminating experience for Ph.D. or specialist degree students. Students engage in specialized service areas either in their own or a cooperating school or school system or university. Weekly on-campus or on-site seminar will be held with the intern supervisor. Internship areas are: (a) Curriculum, (b) Supervision for instructional improvement, (c) Language arts, (d) Science, (e) Mathematics, (f) Reading, (g) Social studies, (h) Early childhood, (i) Elementary education, (j) Middle school, (k) Secondary education, (m) Instruction, (n) Educational media, (o) Environmental education, (p) Children's literature, (q) Family studies, (r) Computer based education, (s) Gifted and talented education, and (t) Teacher education. A maximum of eight hours credit may be applied toward a Ph.D. or specialist degree. Prerequisite: consent of instructor.

599-1 to 6 Thesis. Minimum of three hours to be counted toward a Master's degree. Prerequisite: admission to Master's degree program.

600-1 to 32 (1 to 12 per semester) Dissertation. Minimum of 24 hours for the Doctor of Philosophy degree.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.