

SURGERY

802*. **Clinical Surgical Anatomy**
 Spring. 6(4-3) May reenroll for a maximum of 6 credits.
 Interdepartmental with the Department(s) of Anatomy.
 P: MD or DO Degree and acceptance into Master's in Surgery program R: MD/DO accepted into MS in Surgery Program
 Review of surgical anatomy; the opportunity to obtain detailed anatomical information through lecture and dissection sessions; and the clinical interpretation of anatomy and surgical approaches
 QA: SUR 802

803*. **Enteral and Parenteral Nutrition**
 Fall, , Summer. 4(2-4)
 P: M.D. or D.O. degree & acceptance into Master's in Surgery program R: M.D.'s/D.O.'s accepted into M.S. in Surgery Program
 The identification of individuals requiring nutritional support; nutritional requirements in diseases; delivery of total parenteral and enteral nutrition; special problems in nutrition
 QA: SUR 803

804*. **Research Design and Statistics**
 Spring. 4(-)

Students will recognize/differentiate between experimental designs; recognize/define statistical terms; determine appropriate statistical tests; determine strengths/weaknesses of a manuscript

890*. **Seminars in Research**
 Fall, Spring, Summer. 1 to 7 credits. May reenroll for a maximum of 7 credits.
 P: M.D. or D.O. degree and acceptance into M.S. in Surgery program R: M.S./D.O.'s accepted into M.S. in Surgery Program
 Preparation and presentation of research data, philosophy and methods of research, thesis and other research reports, literature review, illustration of research data, practical assignments
 QA: SUR 890

899*. **Master's Thesis Research**
 Fall, Spring, Summer. 3 to 4 credits. May reenroll for a maximum of 15 credits.
 P: Satisfactory completion of SUR 801, 802, 803, 804 and approval of dept R: M.D.'s/D.O.'s accepted into M.S. in Surgery program
 QA: SUR 899

SYSTEMS SCIENCE SYS

410. **Systems Methodology**
 Spring. 2(1-3)
 P: CE 370. R: Open only to Engineering Arts seniors.
 Systems analysis and design. Needs analysis, system identification, graphical models. Team project required.
 QP: CE 370 QA: SYS 410

810*. **Systems I**
 Fall. 3(3-0)
 P: MTH 234, CPS 120 or CPS 131 R: NONE Not eligible to students with EE undergraduate background
 Introduction to systems methodology and analysis. Mathematical representations of systems, transform and state space analysis, feedback control, system simulation. Practical applications and problems in a range of disciplines.
 QP: MTH 214 QA: SYS 810 SYS 811

811*. **Systems II**
 Spring. 3(3-0)
 P: SYS 810, STT 351 R: NONE
 System modelling methodology and techniques, continuous and discrete system simulation, simulation model optimization with applications to optimal control and parameter estimation, applications and problems in a range of decision support contexts.
 QP: SYS 811 STT 441 QA: SYS 811 SYS 814

TEACHER EDUCATION TE

150. **Reflections on Learning**
 Fall, Spring, Summer. 3(3-0)
 Interdepartmental with the Department(s) of Counseling, Educational Psychology and Special Education.

Students' experiences as learners in comparison to psychological, sociological, and anthropological theories and assumptions about learning and teaching in and out of school.

250. **Human Diversity, Power, and Opportunity in Social Institutions**
 Fall, Spring, Summer. 3(3-0)

Comparative study of schools and other social institutions. Social construction and maintenance of diversity and inequality. Political, social and economic consequences for individuals and groups.

301*. **Learners, Learning, and Teaching in Context(W)**
 Fall. 4(3-3)
 P: TE150 and TE250 or CEP240 R:

Education
 Diverse learners in school, and how they learn. Natural and constructed diversity. Responding to student differences. Ways of knowing. What diverse learners know and what they should learn. Nature and distribution of learning. Multiple literacies.
 QP: TE101 TE200

302*. **Learner Diversity and the Teaching of Subject Matter(W)**
 Spring. 5(3-6)
 P: TE301 R: Education
 Inquiry into teaching and learning of subject matter in context, with an examination of learners, communities, and pedagogy.

305*. **Curriculum Methods and Materials: Elementary Education**
 Fall, Spring. 1 to 3 credits. May reenroll for a maximum of 3 credits.
 R: Elementary certification candidates
 Curriculum in K-8 grades. Methods and materials of teaching elementary and middle school.
 QA: TE305 TE305A TE307A TE308A

306*. **Interdisciplinary Elementary Curriculum**
 Fall. 2(1-2)
 R: Elementary certification candidates/Academic Learning emphasis
 Integrating reading and writing across the curriculum.
 QA: TE306C TE307A TE308A

310*. **Methods of Teaching Reading in the Elementary School**
 Fall. 2(2-0)
 R: Elementary certification candidates
 Methods and materials for teaching reading at elementary level. Analysis of learning and teaching problems, study of concrete materials and instructional strategies.
 QA: TE310 TE310A TE310B TE310C TE310D

312*. **Literacy Instruction in the Elementary Grades**
 Fall. 2(1-3)
 R: Elementary certification candidates
 Application of instructional principles introduced in TE310. Emphasis on nature of literacy, its cultural context, and reading-writing connections.
 QA: TE312 TE312D TE311C TE312A

313*. **Critical Reading and Children's Literature**
 Fall, Spring. 2(2-0)
 R: Elementary certification candidates
 Development of strategies for helping children to develop critical reading skills through literary experience.
 QA: TE313 TE313B TE313D

315*. **Teaching Mathematics in the Elementary Grades**
 Fall, Spring. 1 to 2 credits.
 R: Elementary certification candidates
 Methods and materials for teaching mathematics in the elementary school. Emphasis on problem-solving and meaningful presentation of mathematical content.
 QA: TE315 TE315D TE315C TE315A TE315B

316*. **Teaching Social Studies in Elementary Grades**
 Fall, Spring. 1 to 2 credits.
 R: Elementary certification candidates
 Methods and materials for teaching social studies in diverse elementary classrooms. Use of social science and historical content to address contemporary issues.
 QA: TE316 TE316B TE316C TE316D

317*. **Teaching Language Arts in the Elementary School**
 Fall, Spring. 2(2-0)
 R: Elementary certification candidates
 Methods and materials for teaching language arts in elementary grades. Emphasis on interrelationship of listening, viewing, speaking, reading, and writing.
 QA: TE317 TE317C

318*. **Teaching Science in the Elementary and Middle School**
 Fall. 2(2-0)
 R: Elementary certification candidates
 Methods and materials for teaching science at elementary and middle school grades. Emphasis on teaching science for conceptual understanding.
 QA: TE318 TE318B TE318C TE318D

322*. **Methods of Teaching--Secondary Common Elements**
 Fall. 1(1-0)
 R: Secondary certification candidates
 Instructional issues common to all subject areas. Selection of instructional techniques based on teacher values and belief systems, learner needs and characteristics, and sound education principles and policies.
 QA: TE322

326*. **Methods of Teaching--Secondary Subject Areas: English**
 Fall. 2(2-0)
 R: Candidates for secondary teacher certification
 Specifics of classroom instruction in English. Selection of instructional techniques based on course objectives, needs and characteristics of learners, and sound educational principles and policies.
 QA: TE326

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- 337*.** *Methods of Teaching-Secondary*
Subject Areas: Science
 Fall. 2(2-0)
 R: Candidates for secondary teacher certification
 Classroom instruction in science. Selection of instructional techniques based on recognized course objectives, needs and characteristics of learners, and educational principles and policies.
 QA: TE337
- 338*.** *Methods of Teaching-Secondary*
Subject Areas: Social Science & History
 Fall. 2(2-0)
 R: Candidates for secondary certification
 Issues of classroom instruction in social sciences and history. Selection of instructional techniques based on course objectives, needs and characteristics of learners, and educational principles and policies.
 QA: TE338
- 370*.** *Directed Teaching*
 Fall, Spring. 1 to 3 credits. May reenroll for a maximum of 3 credits.
 R: Elementary certification candidates
 Field-based experience in elementary or secondary schools.
 QA: TE370A TE370B TE370D TE360A
- 401*.** *Crafting Teaching Practice(W)*
 Fall. 6(4-6)
 P: TE302 R: Education
 Design, implementation, and analysis of teaching diverse learners. Subject matter pedagogy. Learning and participating in multiple communities. Professional roles and responsibilities. Clinical practice to foster student learning, professional inquiry.
- 402*.** *Designing and Studying Practice(W)*
 Spring. 6(4-6)
 P: TE401 R: Education
 Design, implementation, and analysis of teaching diverse learners. Repertoire in subject matter pedagogy. Creating and participating in communities. Professional ethics. Clinical practice to foster effective practice, inquiry into teaching and learning.
- 403*.** *Subject-Specific Secondary Instructional Methods*
 Fall, Spring. 2(2-0)
 Classroom instruction in secondary grades in specific subject areas. Selection of instructional techniques based on course objectives, needs and characteristics of learners, and sound educational principles and practices.
 QA: TE320 TE321 TE323 TE324 TE328 TE334 TE339
- 406*.** *Interdisciplinary Learning*
 Fall, Spring. 2(1-3)
 R: Teacher certification candidates / Academic Learning emphasis
 Interdisciplinary teaching, curriculum, and learning in elementary and secondary schools.
 QA: TE406C
- 412*.** *Reading in the Content Areas of the Secondary Level*
 Fall, Spring. 3(2-3)
 R: Secondary certification candidates
 Reading and learning from text. Applications in subject areas including identification of reading-reasoning processes in content areas, assessment, and instructional procedures.
 QA: TE412 TE412A
- 450*.** *School and Society*
 Fall, Spring. 2 to 3 credits.
 R: Teacher certification candidates
 Structure, function, and purposes of educational institutions. Emphasis on issues of diversity, equity and access to knowledge.
 QA: TE450 TE450A TE450B TE450C
- 470*.** *Student Teaching*
 Fall, Spring. 1 to 10 credits. May reenroll for a maximum of 10 credits.
 R: Teacher Certification candidates
 Extended experience in K-12 classrooms to demonstrate proficiency in teaching. Learning to teach and nature of teaching practice.
 QA: TE470 TE470A TE470B TE470C TE470D
- 473*.** *Elementary Student Teaching: Special Education*
 R: Candidates for special education teaching certification
 Special education student teaching in elementary schools. Planning, implementing and evaluating instruction. Individualized Educational Planning Committees and multidisciplinary exercises.
 QA: TE473
- 474*.** *Secondary Student Teaching: Special Education*
 Special Education student teaching in secondary school settings: full-time practicum experience includes planning, implementing and evaluating instruction; participation in IEP Committees and multidisciplinary planning exercises.
 QA: TE474
- 480*.** *Proseminar in Learning Community*
 Spring. 1(1-0)
 R: Elementary certification candidates / Learning Comm emphasis
 Action research on problems of teaching practice based on research field experience in program.
 QA: TE480D
- 490*.** *Reading and Independent Study in Teacher Education*
 Fall, Spring, Summer. 1 to 6 credits. May reenroll for a maximum of 6 credits.
 R: Candidates for teacher certification
 Individual or small group study of the practice of teaching.
- 491*.** *Special Topics in Teacher Education*
 Fall, Spring, Summer. 1 to 6 credits. May reenroll for a maximum of 6 credits.
 R: Candidates for teacher certification
 Seminars about aspects of teaching practice and inquiry into practice.
 QA: TE482
- 494*.** *Field Experience in Teacher Education*
 Fall, Spring. 1 to 10 credits. May reenroll for a maximum of 10 credits.
 Supervised practica and/or observations in educational settings.
 QA: TE484
- 801*.** *Internship in Teaching Diverse Learners I(W)*
 Fall. 4(2-6)
 P: TE402 C: TE802, TE803 R: Open only to students seeking teacher certification
 Directed teaching internship with diverse learners. Creating learning communities in heterogeneous classrooms that include diverse and special education students.
- 802*.** *Professional Role and Teaching Practice I(W)*
 Fall. 3(2-2)
 P: TE402 C: TE801, TE803 R: Open only to students seeking teacher certification
 Integrating leadership with instructional practice. Application of scholarship to instructional practice. Advanced topics in the teaching and learning of diverse students.
- 803*.** *Reflection and Inquiry in Teaching Practice I(W)*
 Fall. 3(2-3)
 P: TE402 C: TE801, TE802 R: Open only to students seeking teacher certification
 Conceptualizing, framing, conducting, and disseminating inquiry about teaching practices, learning processes, and social contexts in a professional community. Developing learning communities, including diverse and special education students.
- 804*.** *Internship in Teaching Diverse Learners II(W)*
 Spring. 5(2-9)
 P: TE801, TE802, TE803 C: TE805, TE806 R: Open only to students seeking teacher certification
 Directed teaching internship with diverse learners. Creating learning communities in heterogeneous classrooms that include diverse and special education students.
- 805*.** *Professional Role and Teaching Practice II(W)*
 Spring. 3(2-2)
 P: TE801, TE802, TE803 C: TE804, TE806 R: Open only to students seeking teacher certification
 Integrating leadership with instructional practice. Application of scholarship to instructional practice. Advanced topics in the teaching and learning of diverse students.
- 806*.** *Reflection and Inquiry in Teaching Practice II(W)*
 Spring. 3(2-3)
 P: TE801, TE802, TE803 C: TE804, TE805 R: Open only to students seeking teacher certification
 Conceptualizing, framing, conducting, and disseminating inquiry about teaching practices, learning processes, and social contexts in a professional community. Developing learning communities, including diverse and special education students.
- 807*.** *Professional development and inquiry*
 Summer. 2(2-0)
 R: Open only to curriculum & teaching M.A. students.
 Teacher-centered inquiry through autobiography and documentation of self as learner. Relation of own research and classroom-based research to improve one's own practice.
 QA: TE829 TE869
- 808*.** *Inquiry into Teaching and Learning in Classrooms*
 Summer. 2(2-0)
 R: Open only to curriculum and teaching M.A. students.
 Alternative forms of classroom inquiry to improve teaching and learning of subject matter. Studying social context of teaching and learning, pedagogy, teaching effects, and social and academic outcomes for diverse learners.
 QA: TE869 TE870

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- 809*.** **Curriculum and Staff Development and School Change**
Summer. 2(2-0)
R: Open only to curriculum and teaching M.A. students.
 Problems and promise of school change through curriculum and staff development.
- 810*.** **History of American Education**
Spring of odd-numbered years. 3(3-0)
R: Open only to M.A. and Ph.D. students
 Social and intellectual history of educational ideals and institutions. Changing nature of teaching, learning and management of schools. Legacies of reform initiatives. Evolution and preparation of educational profession.
 QA: TE804A
- 811*.** **Philosophy and Issues in Education**
Fall, Spring. 3(3-0)
R: Open only to M.A. and Ph.D. students
 Categories and nomenclature of philosophy of education. Distinctions and analytic tools used in evaluating current educational goals, practices, issues, and reforms.
 QA: TE800 TE801A
- 812*.** **Sociological Inquiry into Education**
Spring of even-numbered years. 3(3-0)
R: Open only to M.A. and Ph.D. students
 Sociological inquiry into schooling, teaching, and learning. Relationships of educational organizations and practices to social structure, systems, and institutions.
 QA: SOC901 TE901
- 815*.** **Comparative Analysis of Educational Practice**
Fall of even-numbered years. 3(3-0)
R: Open only to M.A. and Ph.D. students
 Cross-national comparison of educational practices in light of differences in culture, social organization, economic conditions, historical circumstance. International perspectives on US education. Borrowing and adapting educational practices.
 QA: TE803A TE803B
- 816*.** **Education in Transition: Concepts, Policies, and Practices**
Fall of odd-numbered years. 3(3-0)
R: Open only to M.A. and Ph.D. students
 Comparative analysis of change in educational concepts, policies and practices. Contributions of concepts and policies in education to transformation of societies, politics, and economics.
- 818*.** **Curriculum and schooling in social context**
Fall, Spring. 3(3-0)
R: Open only to M.A. and Ph.D. students
 Philosophical, social, and historical foundations of curriculum. Issues and practices across subjects, grades, school, settings. Moral consequences of curriculum decisions for teaching and learning, and for teachers and students.
 QA: TE810A
- 820*.** **Power and Pluralism in Practice**
Spring of odd-numbered years. 3(3-0)
R: Open only to M.A. and Ph.D. students
 Connections between schools and diversity, inequality and power in society. Genesis and consequences of school policies for diverse learners.
- 821*.** **Race and Educational Policy in the United States**
Spring of even-numbered years. 3(3-0)
R: Open only to M.A. and Ph.D. students
 Educational policy and practice in relation to race in the US and efforts to effect change. Racially-sensitive curricular and instructional practices.
- 822*.** **Issues of Culture in Classroom and Curriculum**
Fall of odd-numbered years. 3(3-0)
R: Open only to M.A. and Ph.D. students
 Socio-cultural contexts and functions of schooling. Schools and classrooms as cultural systems. Cultural diversity in education. Students' cultural backgrounds in relation to curriculum. Developing effective multicultural curricula for all students.
 QA: TE806
- 823*.** **Learning Communities and Equity**
Spring of even-numbered years. 3(3-0)
R: Open only to M.A. and Ph.D. students only
 Cooperative grouping and heterogeneous learning teams. Impact of learning communities and impact on school curricula.
 QA: TE 811A TE 811B TE 811C
- 825*.** **Diverse Learners and Learning Subject Matter**
Spring, Summer. 3(3-0)
R: Open only to Masters and Doctoral students.
 Multiple perspectives on teaching subject matter to diverse learners. Investigations of texts, curricula, and pedagogical approaches that support meaningful learning. Subject-specific issues related to classroom diversity.
- 826*.** **Instructional Alternatives for Diverse Learners**
3(3-0)
 Alternative instructional approaches to teaching diverse learners. Implications of pedagogy and classroom organization. Relation of one's own practices and beliefs to situated decision making.
- 830*.** **Designing Interdisciplinary Curricula**
Spring. 3(3-0)
R: Open only to M.A. and Ph.D. students.
 Historical and conceptual analyses of ways to design, organize, and integrate curricula across subject areas. Evaluation and application of defensible criteria for planning and teaching interdisciplinary curricula.
- 831*.** **Teaching School Subject Matter with Technology**
Fall, Summer. 3(3-0)
R: Open only to M.A. and Ph.D. students
 Uses of technologies in teaching subject matter to diverse learners. Models for teaching subject matter through technology. Critical perspectives on technologies in schools.
 QA: TE446A CEP446A TE446B CEP446B
- 840*.** **Proseminar I: Historical Bases of Literacy Instruction**
Fall. 3(3-0)
R: Open only to students in literacy instruction M.A. program
 Historical foundations of literacy instruction with emphasis on scholarly writing about relationships between language processes and schooling.
 QA: TE819A TE819B
- 841*.** **Proseminar II: Psychological Bases of Literacy Instruction**
Spring. 3(3-0)
P: TE840 R: Open only to students in the M.A. literacy instruction prgm
 Psychological foundations of literacy instruction, including models, theories, psychological processes, social and contextual factors, and text features.
 QA: TE819B TE819C
- 842*.** **Advanced Methods of Elementary School Reading**
Fall, Summer. 3(3-0)
R: Master's and/or Ph.D.
 Methods and materials for teaching developmental and content area reading in grades K-8.
 QA: TE820A
- 843*.** **Reading, Writing, and Reasoning in Secondary School Subjects**
Spring. 3(3-0)
R: Masters and/or Ph.D.
 Knowledge and methodology for teaching language, literacy, and thinking in secondary school subject areas.
 QA: TE820C TE820D
- 844*.** **Classroom Literacy Assessment**
Summer. 3(3-0)
R: Masters and/or Ph.D
 Knowledge and methodology about ongoing and summative types of classroom assessment in oral language, reading, and writing at the elementary and secondary levels.
 QA: CEP820E CEP820G
- 845*.** **Language Diversity and Literacy Instruction**
Fall. 3(3-0)
R: Masters and/or Ph.D
 Comparative study of first and second language acquisition and instructional implications for literacy teachers of students with diverse language backgrounds.
- 846*.** **Issues of Research and Practice in Literacy Instruction**
Spring. 3(3-0)
R: Open only to students in M.A. in Literacy Instruction program Open only to Lit Instruction stidts who have passed comps
 Synthesis and application of knowledge acquired through consideration of current research and issues from practice.
 QA: TE820K
- 847*.** **Advanced Methods for Teaching Language Arts**
Fall. 3(3-0)
R: Masters and/or Ph.D.
 Methods and materials for teaching listening, speaking, reading, and writing with emphasis on language development across the curriculum.
 QA: TE822A
- 848*.** **Methods of Writing Instruction**
Spring of even-numbered years. 3(3-0)
P: TE847 R: Masters and Doctoral students
 Rationale and methods for writing instruction from pre-writing through drafting and editing.
 QP: TE822A QA: TE822C
- 849*.** **Methods and Materials for Teaching Children's and Adolescent Literature**
Fall of odd-numbered years, Summer of even-numbered years. 3(3-0)
R: Open only to Masters and Doctoral students
 Evaluation and utilization of various genres and elements of literature for children and adolescents (ages 4-18) with focus on literature in K-12 schools.
 QA: TE824A TE824B TE824C TE824F TE824G

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850*. **Critical Reading for Children and Adolescents**
 Fall of even-numbered years. 3(3-0)
 P: TE849 R: Open only to Masters and
 Doctoral students
 Teaching and learning of critical and aesthetic responses to literature for K-12 students.
 QP: TE 824A QA: TE 824E

851*. **Literacy for the Young Child in Home and School**
 Spring of odd-numbered years. 3(3-0)
 P: TE849 R: Open only to Masters and
 Doctoral students
 Literacy development in children from early infancy through age six with emphasis on evaluation and utilization of literature for young children.
 QP: TE 824A QA: TE 824F

855*. **Teaching School Mathematics**
 3(3-0)
 R: Open only to M.A. and Ph.D. students
 Methods, materials, activities and content important to teaching mathematics. Emphasis on conceptual understanding, growth of mathematical ideas, implications for lesson development, teaching diverse learners, and evaluating student learning.

856*. **Alternatives in School Mathematics Curriculum**
 Spring, Summer. 3(3-0)
 R: Open only to M.A. and Ph.D. students
 Multiple perspectives on alternatives in school mathematics curriculum. Selection, appraisal, and uses of materials in the classroom. Representation of selected mathematical content for diverse learners.

857*. **Teaching and Learning Mathematical Problem Solving**
 Fall. 3(3-0)
 R: Open only to M.A. and Ph.D. students
 Alternative approaches to solving mathematical problems and incorporating problem solving into K-12 teaching. Selection, appraisal, and uses of problems in the classroom, materials, and assessment strategies.

860*. **Practice and Inquiry in Science Education**
 Spring. 3(3-0)
 R: Open only to M.A. and Ph.D. students
 Professional development in teaching science subjects. Emphasis on learner diversity, learning community, conceptual understanding, subject matter content, and learners' prior knowledge.
 QA: TE826C TE826E

865*. **Models of Teaching and Learning K-12 Social Studies**
 Fall. 3(3-0)
 R: Open only to M.A. and Ph.D. students
 Alternative purposes for teaching and learning social studies. Models for developing citizenship and social science reasoning and content with diverse learners.
 QA: TE830A

866*. **K-12 Social Studies Curriculum**
 Spring. 3(3-0)
 R: Open only to M.A. and Ph.D. students
 Issues and practices in social studies from historical, philosophical, and epistemological perspectives. Student diversity and the social studies curriculum. Reforms and needed research in social studies education.
 QA: TE830C

867*. **Perspectives in Social Studies: Global Education**
 Fall, Summer. 3(3-0) May reenroll for a maximum of 6 credits.
 R: Open only to M.A. and Ph.D. students
 Issues affecting the global community. Teaching and curriculum development strategies designed to develop a global perspective on human relationships and the environment.
 QA: TE830K

868*. **Perspectives in Social Studies: Law-Related Education**
 Summer. 3(3-0)
 R: Open only to M.A. and Ph.D. students
 Intellectual, social, and personal premises for law-related education. Alternative strategies for curricular infusion.
 QA: TE830G

869*. **Perspectives in Social Studies: Teaching about Canada**
 Spring. 3(3-0)
 R: Open only to M.A. and Ph.D. students
 Epistemological and methodological dimensions of teaching about Canada and Canadian-American relations in U.S. schools. Emphasis on cultural, political, and environmental issues.

870*. **Curriculum Design, Development, and Deliberation in Schools**
 Fall. 3(3-0)
 R: Open only to M.A. and Ph.D. students
 Simulation in curriculum deliberation and group decisionmaking. Critique of curriculum discourse, process, and product. Teachers' knowledge and roles in curriculum development. Site-based curriculum and staff development in context of school reform.
 QA: TE810C

871*. **Organizational Leadership in Education**
 Fall. 3(3-0)
 R: Open only to M.A. and Ph.D. students
 Leadership and management of educational organizations. Tradeoffs involved in cultivating school leadership.

872*. **Teachers as Teacher Educators**
 Spring. 3(3-0)
 R: Open only to M.A. and Ph.D. students
 Helping novice teachers learn to teach. What beginning teachers need to learn. Experienced teachers' contribution to professional development and school change.

875*. **Teaching in International Schools**
 Spring, Summer. 3(3-0)
 R: Open only to M.A. and Ph.D. students
 Problems of teaching practice in schools with multinational student populations. Characteristics and experiences of third culture children. Curricular and school organizational structures and relationship to local culture.

882*. **Seminars in Curriculum and Teaching(MTC)**
 Fall, Spring, Summer. 1 to 4 credits.
 May reenroll for a maximum of 9 credits.
 R: Open only to M.A. and Ph.D. students
 Seminars in the various fields of emphasis in curriculum, teaching, and schooling.

882A*. **American Culture and Education(MTC)**
 Spring. 3(3-0)
 R: Open only to M.A. and Ph.D. students
 Interdisciplinary study of the connections among education, literature, and politics over time in U.S. history. Focus on the common school, progressive, and civil rights eras.

883*. **Seminars in Literacy Instruction(MTC)**
 Fall, Spring, Summer. 1 to 4 credits.
 May reenroll for a maximum of 9 credits.
 R: Open only to M.A. and Ph.D. students
 Seminars in the various fields of emphasis in literacy instruction.

883A*. **Oral Language and Literacy**
 Summer of odd-numbered years.
 3(3-0)
 P: TE847 R: Open only to Masters and
 Doctoral students
 Oral language development forms the foundation for literacy learning. Methods of instruction in oral language, as well as their research foundations, constitute the course.
 QA: TE822B

883B*. **Children's Classics and Award Books**
 Spring of odd-numbered years,
 Summer of even-numbered years.
 3(3-0)
 P: TE849 R: Open only to graduate students
 Evaluation and utilization of a variety of literary genres which have been designated classics and award books for children ages 4-18. Research on children's responses to this literature.
 QP: TE 824A QA: TE824J

883C*. **Comprehension Instruction in the Classroom**
 Spring of odd-numbered years. 3(3-0)
 P: TE841, TE842 R: Open only to graduate students
 Reading processes. Instruction in comprehension. Effectiveness of various approaches to developing comprehension.
 QA: TE875

883D*. **Theory and Research on the Teaching of Writing**
 Fall. 3(3-0)
 R: Open only to graduate students
 Theory and research on the teaching of writing from social, cognitive and developmental perspectives. Curriculum and instruction reviewed from perspective of written literacy.

890*. **Reading and Independent Study in Curriculum and Teaching**
 Fall, Spring, Summer. 1 to 6 credits.
 May reenroll for a maximum of 9 credits.
 R: Open only to M.A. and Ph.D. students
 Individual or group study in the various fields of emphasis in curriculum, teaching, and schooling.

891A*. **Special Topics in Teaching Subject Matter to Diverse Learners**
 Fall, Spring, Summer. 1 to 4 credits.
 May reenroll for a maximum of 9 credits.
 R: Open only to M.A. and Ph.D. students
 Issues related to teaching K-12 school subjects to diverse learners.

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- 891B*** *Special Topics in Social Studies Education*
Fall, Spring, Summer. 1 to 4 credits.
May reenroll for a maximum of 9 credits.
R: Open only to M.A. and Ph.D. students
Issues related to teaching social studies in K-12 schools.
- 891C*** *Special Topics in Literacy Instruction*
Fall, Spring, Summer. 1 to 4 credits.
May reenroll for a maximum of 9 credits.
R: Open only to M.A. and Ph.D. students
Issues related to teaching literacy in K-12 schools.
- 891D*** *Special Topics in Mathematics Education*
Fall, Spring, Summer. 1 to 4 credits.
May reenroll for a maximum of 9 credits.
R: Open only to M.A. and Ph.D. students
Issues related to teaching mathematics in K-12 schools.
- 891E*** *Special Topics in Science Education*
Fall, Spring, Summer. 1 to 4 credits.
May reenroll for a maximum of 9 credits.
R: Open only to M.A. and Ph.D. students
Issues related to teaching science in K-12 schools.
- 891F*** *Special Topics in School Organization and Change*
Fall, Spring, Summer. 1 to 4 credits.
May reenroll for a maximum of 9 credits.
R: Open only to M.A. and Ph.D. students
Issues related to organization and change in K-12 schools.
- 891G*** *Special Topics in Teaching, Curriculum, and Schooling*
Fall, Spring, Summer. 1 to 4 credits.
May reenroll for a maximum of 9 credits.
R: Open only to M.A. and Ph.D. students
Issues related to foundational areas undergirding teaching, curriculum, and K-12 schooling.
- 892*** *Laboratory and Field Experiences in Curriculum and Teaching*
Fall, Spring, Summer. 1 to 6 credits.
May reenroll for a maximum of 9 credits.
R: Open only to M.A. and Ph.D. students
Supervised graduate practica, observations, internships, and externships in fields of emphasis in curriculum, teaching, and schooling.
- 894*** *Workshops in Curriculum and Teaching*
Fall, Spring, Summer. 1 to 6 credits.
May reenroll for a maximum of 6 credits.
R: Open only to M.A. and Ph.D. students
Laboratory approach which provides opportunity for educators to examine common areas of interest in curriculum, teaching, and schooling.
- 899*** *Master's Thesis Research*
Fall, Spring, Summer. 2 to 12 credits in increments of 2 credits. May reenroll for a maximum of 12 credits.
R: Open only to M.A. and Ph.D. candidates
- 901*** *Proseminar in Curriculum, Teaching and Educational Policy I*
Fall. 3(3-0)
R: Open only to Doctoral students in Teacher Education
Two of four historical episodes of improving teaching practice, teacher and student learning, curricula, and educational policy. Impact of aspirations for learning and teaching in school. Nature and effects of reforms. US and comparative cases.
QA: TE975 TE976 TE977
- 902*** *Proseminar in Curriculum, Teaching, and Educational Policy II*
Spring. 3(3-0)
P: TE901 R: Open only to Doctoral students, Teacher Education
Two of four historical episodes of improving teaching practice, teacher and student learning, curricula, and educational policy. Impact of aspirations for learning and teaching in school. Nature and effects of reforms. US and comparative cases.
QA: TE975 TE976 TE977
- 915*** *Language, Literacy and Learning*
0(-)
Theoretical and practical perspectives on the role of language in mediating cognition, affect and action in educational contexts. Relationship between oral and literate discourse and sociocultural nature of educational contexts.
- 916*** *Curriculum History and School Subjects*
Fall of odd-numbered years. 3(3-0)
R: Open only to graduate students
Formation and organization of contemporary U.S. school curricula and school subjects in historical, epistemological and sociopolitical contexts.
- 917*** *Contemporary Theories and Discourses in Education*
Fall of even-numbered years. 3(3-0)
R: Open only to graduate students
Contemporary theories from diverse disciplines and their application to curriculum, teaching, and research. Logical positivism, interpretive theories, critical theory, feminist theory, poststructuralism and neo-pragmatism.
QA: TE910M
- 918*** *Disciplinary Knowledge and School Subjects*
Spring. 3(3-0)
R: Open only to graduate students
Cross-disciplinary comparisons of the nature of knowledge, its creation, refutation, and use. Correspondence between disciplinary knowledge and knowledge as represented in schools.
QA: TE941
- 919*** *Policy Analysis in Education*
Fall. 3(3-0)
R: Open to graduate students
Conception, generation and analysis of educational policies in various contexts, including governance level, national setting, and legislative forms. Limitation, use and ethics of policy analysis.
QA: TE933
- 920*** *Social Analysis of Educational Policy*
Spring. 3(3-0)
R: Open only to graduate students
Social science perspectives on social factors outside and inside school systems which shape American educational policy and influence both the nature of policy problems and the form of educational solutions.
- 921*** *Learning to Teach*
Spring. 3(3-0)
R: Open only to graduate students
Intellectual, practical and moral dimensions of teaching and learning to teach. Impact of formal and informal influences on teachers' knowledge, skills and dispositions.
- 922*** *The Shape of Teacher Education*
Fall. 3(3-0)
R: Open only to graduate students
Historical and contemporary forms of teacher education in relation to social and institutional contexts. Relation of traditional and innovative programs to basic tensions and issues in the field.
- 923*** *Comparative Perspectives on Teaching, Curriculum and Teacher Education*
Spring of odd-numbered years. 3(3-0)
R: Open only to graduate students
Contrastive analysis of national responses to universal questions in education, including the links among education and nation-building bases, organization and distribution of knowledge and the organization, preparation and practice of teaching
- 924*** *Philosophy of Education: Ideas and Methods*
Fall of odd-numbered years. 3(3-0)
R: Open only to graduate students
Selected ideas in education from different philosophical traditions. Emphasis on issues of method, historical perspectives and textual analysis.
- 931*** *Approaches to Qualitative Research Methods in Education*
Fall. 4(4-0) Interdepartmental with the Department(s) of Educational Administration, Counseling, Educational Psychology and Special Education, Physical Education and Exercise Science.
P: TE930 R: Open only to Doctoral students
Multiple traditions of qualitative research in education. Approaches to theory, research questions and design, data collection and analysis, and reporting. Ethical issues. Appraising qualitative research.
QA: TE921 TE922 TE923 EAD951H
- 940*** *Curriculum Deliberation and Development*
Spring of even-numbered years. 3(3-0)
R: Open only to graduate students
Concepts and methods in curriculum deliberation and development. Discourse, group dynamics, processes, and outcomes for teaching/learning. Expertise/roles in curriculum development.
QA: TE910G
- 941*** *Marginalized Subjects in Curriculum and Teaching*
Spring of odd-numbered years. 3(3-0)
R: Open only to graduate students
School subjects, ways of knowing, and people perennially marginalized by omission or inequitable policies/practices in school. Critical/feminist pedagogy.

TEACHER EDUCATION

- 946***. **Current Issues in Literacy Research and Instruction**
Spring of odd-numbered years. 3(3-0)
R: Open only to graduate students
 Evolving definitions, research methodologies and agendas in relation to psychological, social and political influences on literacy research and instruction.
- 950***. **Mathematical Ways of Knowing**
Fall of even-numbered years. 3(3-0)
R: Open only to graduate students
 Comparison and contrast of philosophical, cultural, political, societal, psychological, and historical perspectives on knowing in mathematics as a discipline, in school and nonschool settings.
- 955***. **Contemporary Issues in Science Curriculum and Teaching**
Fall. 1 to 3 credits. May reenroll for a maximum of 6 credits.
R: Open only to graduate students
 Epistemological, social, psychological and historical foundations of science education in relation to contemporary issues and problems of science curriculum, teaching and policy.
- 960***. **Language, Literacy and Educational Policy**
Fall of odd-numbered years. 3(3-0)
R: Open only to graduate students
 Policy in language and literacy in relation to framing curriculum for language and literacy, the linguistic nature of pupil assessment, and the gate-keeping function of schools.
- 965***. **The Craft of Policy Analysis in Education**
Spring of odd-numbered years. 3(3-0)
R: Open only to graduate students
 Craft of producing, analyzing and using educational policy framing problems, devising alternative solutions, clarifying stakes in choices, and predicting impacts of choices.
- 970***. **Curriculum and Pedagogy in Teacher Education**
Spring of odd-numbered years. 3(3-0)
R: Open only to graduate students
 Teacher learning opportunities at the preservice, induction and inservice levels. Intended and enacted curriculum, sources of pedagogy, impact on teachers' knowledge, skill and disposition.
- 971***. **Teacher Learning in School Settings**
Fall of odd-numbered years. 3(3-0)
R: Open only to graduate students
 School-based learning for prospective, beginning, and experienced teachers. Observation, conversation, writing, classroom research as tools for improving teaching.
- 975***. **Policy Perspectives on Teaching and Teacher Education**
Spring of even-numbered years. 3(3-0)
R: Open only to graduate students
 Policy perspectives on enduring issues in teaching and teacher education, such as problems of teacher accountability, teacher knowledge, and political influence.
- 982***. **Seminars in Curriculum, Teaching and Educational Policy(MTC)**
Fall, Spring, Summer. 1 to 4 credits.
May reenroll for a maximum of 10 credits.
R: Open only to graduate students
 Seminars in doctoral emphasis areas of curriculum, teaching, and learning; educational policy and social analysis; and teacher education and teacher learning.
- 982A***. **Philosophy of Educational Research**
Fall of odd-numbered years. 3(3-0)
Interdepartmental with the Department(s) of Counseling, Educational Psychology and Special Education.
P: CEP/TE 930 Educational Inquiry
R: Open only to graduate students
 Concepts and methods from philosophy of science/social science for educational inquiry. Issues of context, values, and rhetoric in making theoretical or practical arguments in education.
 QA: TE928 CEP928
- 982B***. **Trends and Issues in Children's and Adolescent Literature**
Spring. 3(3-0)
P: TE824A Methods & Materials in Lit for Children & Adol or Permission R: Open only to graduate students
 Controversies resulting from current developments and directions pertaining to publishing, evaluating, selecting, studying, and utilizing literature for children and adolescents.
 QA: TE824C
- 990***. **Readings and Independent Study in Curriculum, Teaching, and Educational Policy**
Fall, Spring, Summer. 1 to 4 credits.
May reenroll for a maximum of 10 credits.
R: Open only to Doctoral students
 Individual or small group study in the emphasis areas of curriculum, teaching, and learning; educational policy and social analysis; and teacher education and teacher learning.
- 991A***. **Special Topics in Curriculum**
Fall, Spring, Summer. 1 to 6 credits.
May reenroll for a maximum of 6 credits.
R: Open only to graduate students
 Problems, topics and issues in curriculum theory, policy and practice in diverse educational settings.
- 991B***. **Special Topics in History and Social Science Curricula, Teaching, and Policy**
Fall, Spring, Summer. 1 to 6 credits.
May reenroll for a maximum of 6 credits.
R: Open only to graduate students
 Problems, topics, and issues in history and social science education.
- 991C***. **Special Topics in Literacy Curricula, Teaching, and Policy**
Fall, Spring, Summer. 1 to 6 credits.
May reenroll for a maximum of 6 credits.
R: Open only to graduate students
 Problems, topics, and issues in literacy education.
- 991D***. **Special Topics in Math Curricula, Teaching and Policy**
Fall, Spring, Summer. 1 to 6 credits.
May reenroll for a maximum of 6 credits.
R: Open only to graduate students
 Problems, topics and issues in mathematics education.
- 991E***. **Special Topics in Science Education**
Fall, Spring, Summer. 1 to 6 credits.
May reenroll for a maximum of 6 credits.
R: Open only to graduate students
 Problems, topics and issues in science education.
- 991F***. **Special Topics in Educational Policy and Social Analysis**
Fall, Spring, Summer. 1 to 6 credits.
May reenroll for a maximum of 6 credits.
R: Open only to graduate students
 Problems, topics and issues in educational policy studies and the social analysis of education.
- 991G***. **Special Topics in Teacher Education and Teacher Learning**
Fall, Spring, Summer. 1 to 6 credits.
May reenroll for a maximum of 6 credits.
R: Open only to graduate students
 Problems, topics, and issues concerning the initial and continuing education and learning of teachers.
- 991H***. **Special Topics in Foundations of Education**
Fall, Spring, Summer. 1 to 6 credits.
May reenroll for a maximum of 6 credits.
R: Open only to graduate students
 Problems, topics, and issues in the social and philosophical foundations of education.
- 994***. **Laboratory and Field Experience in Curriculum, Teaching and Educational Policy:**
Fall, Spring, Summer. 1 to 6 credits.
May reenroll for a maximum of 6 credits.
R: Open only to Doctoral students
 Supervised practica, observations, internships, and externships in the emphasis areas of curriculum, teaching and learning; educational policy and social analysis; and teacher education and teacher learning.
- 995***. **Research Practicum in Curriculum, Teaching, and Educational Policy:**
Fall, Spring, Summer. 1 to 4 credits.
May reenroll for a maximum of 4 credits.
R: Open only to Doctoral students
 Supervised research practicum. Design, execution, analysis, presentation, critique, and revision of research projects.
- 999***. **Doctoral Dissertation**
Fall, Spring, Summer. 0(-)
R: Open only to Doctoral students